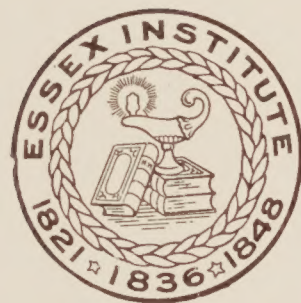


67 days to St. Helena  
4.4 - from " to York  
11.1

Feb.



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CATALOGUES



656 18447

# Lunars by Pinn J. Waters. Salem Mass

225  
 Feb 14<sup>th</sup> Alt is by N 13<sup>d</sup> 1<sup>st</sup> 0' 0" D.D. Mid 12<sup>th</sup> 14.59 H Par 55.00  
 " " 13<sup>th</sup> 14.55 " " 54.45  
 Long in time 7 4 15  
 Reduced time 12. 18. 40 2 7  
 14. 56 5 15  
 14. 51 5 15  
 15. 02 15. 02  
 0<sup>alt</sup> 72.39 - 3<sup>alt</sup> 2120  
 Alt Dist - 79. 44. 47"  
 0<sup>alt</sup> 16. 13  
 3<sup>alt</sup> 15. 2  
 Ap. Dist 80. 16. 02  
 1<sup>st</sup> Cor - 4. 6. 50 4<sup>th</sup> HP - 5158 Same - 5158  
 2<sup>d</sup> Cor - 5. 3. 25 5<sup>th</sup> Sec 0<sup>alt</sup> 10202 6<sup>th</sup> Sec 3<sup>alt</sup> - 4391  
 3<sup>d</sup> Cor - 2. 3. 2 7<sup>th</sup> ap Dist 9.9937 8<sup>th</sup> ap Dist - 7656  
 True dist 79. 28. 49 15297 1.7205  
 79. 28. 28 4<sup>th</sup> Log 3362 5<sup>th</sup> HP 2.7112  
 18 (21) 6<sup>th</sup> 2.3750  
 1 0 45  
 In time 18. 00 - 45 0<sup>alt</sup> 72.39  
 18. 00. 45  
 10. 51. 28  
 7. 09. 17  
 105  
 2  
 Lon 107. 19  
 10. 51. 28  
 9. 17. 28  
 10. 51. 28  
 Thursday 13<sup>th</sup> Feb 1845



This Journal was kept by Penn T. Waters during his first voyage to sea in the Ship Thomas Perkins of Salem, commanded by William Graves Jr of Newbury-port, to Manila & other Ports in the East Indies, begun November 19<sup>th</sup> 1844 & ended

### List of Officers & Crew -

|   |                    |        |
|---|--------------------|--------|
| William Graves Jr Master                      | Shamon Hamilton    | Seaman |
| Jam <sup>l</sup> W. Pike 1 <sup>st</sup> Mate | John Dietrich      | "      |
| Charles Bydicott 2 <sup>d</sup> "             | John C. Casson     | "      |
| Theodore Killings Steward                     | Alva God           | "      |
| George Cleworth Cook                          | Isaac Harding Jr   | "      |
| George Watteall Carpenter                     | Alfred Coffin      | "      |
| Mahon Dabynsple Sailmaker                     | Thomas Knapp       | "      |
| Cha <sup>r</sup> Turner Seaman                | Charles A. Johnson | "      |
| Ed <sup>d</sup> Miller "                      | Penn T. Waters     | "      |
| Rich Jackson "                                | Harro Endicott     | "      |
| Eyre Saddler "                                |                    |        |
| Dan <sup>l</sup> Saddler "                    |                    |        |
| John Jepson "                                 |                    |        |

Died at Manila  
Mahon Dabynsple  
Shamon Hamilton

alias  
John Helgreen

Shipped at Manila  
John Johnson  
Hans C. Voght

Discharged at Manila -  
Eyre Saddler (sick)

Passenger from Manila to New York  
Nathan Cook of Salem



# SEA JOURNAL.

## JOURNAL OF A VOYAGE

From *New York* to *Manila* in  
the *Ship Thos Perkins* commanded  
by *Capt William Leves Jr*  
Begun *November 19<sup>th</sup>* 1844 and  
terminated 1846

KEPT BY

*Leam T. Waters*



MANUFACTURED BY

JOHN P. JEWETT,

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| Journal from New York towards Maricao. |    |      |          |            |      |  |             |        |             |           |
|--|----|------|----------|------------|------|--|-------------|--------|-------------|-----------|
| H.                                     | K. | H.K. | Courses. | Winds.     | Lee. | Remarks. Tuesday Nov 19 <sup>th</sup> 1844   |             |        |             |           |
| 1                                      |    |      |          |            |      | Commenced with light breezes from N.W. & A.M. crew came on board. Proceeded down the river in tow of a Steamer & made sail on the Ship at noon - Discharged the Pilot - Ends with light airs & pleasant -        |             |        |             |           |
| 2                                      |    |      |          |            |      |  |             |        |             |           |
| 3                                      |    |      |          |            |      |  |             |        |             |           |
| 4                                      |    |      |          |            |      |  |             |        |             |           |
| 5                                      |    |      |          |            |      |  |             |        |             |           |
| 6                                      |    |      |          |            |      |  |             |        |             |           |
| 7                                      |    |      |          |            |      |  |             |        |             |           |
| 8                                      |    |      |          |            |      |  |             |        |             |           |
| 9                                      |    |      |          |            |      |  |             |        |             |           |
| 10                                     |    |      |          |            |      |  |             |        |             |           |
| 11                                     |    |      |          |            |      |  |             |        |             |           |
| 12                                     |    |      |          |            |      |  |             |        |             |           |
| 1                                      |    |      |          |            |      |  |             |        |             |           |
| 2                                      |    |      |          |            |      |  |             |        |             |           |
| 3                                      |    |      |          |            |      |  |             |        |             |           |
| 4                                      |    |      |          |            |      |  |             |        |             |           |
| 5                                      |    |      |          |            |      |  |             |        |             |           |
| 6                                      |    |      |          |            |      |  |             |        |             |           |
| 7                                      |    |      |          |            |      |  |             |        |             |           |
| 8                                      |    |      |          |            |      |  |             |        |             |           |
| 9                                      | 7  |      |          |            |      |  |             |        |             |           |
| 10                                     | 7  |      |          |            |      |  |             |        |             |           |
| 11                                     | 7  |      |          |            |      |  |             |        |             |           |
| 12                                     | 7  |      |          |            |      |  |             |        |             |           |
| Course.                                |    |      | Dist.    | Diff. lat. | Dep. | Lat. by D. R.  | Lat. by Ob. | Varia. | Diff. Long. | Long. in. |
|  |    |      | 20       |            |      |  |             |        |             |           |
| H.                                     | K. | H.K. | Courses. | Winds.     | Lee. | Remarks. Wednesday Nov 20 <sup>th</sup> 1844   |             |        |             |           |
| 1                                      |    |      |          |            |      | Commenced with moderate breezes variable from West to S.W. 6 P.M. Highland lights bore N. N. W. 20 miles; from which we take our departure; at 8 A.M. took in fore topmast standing sail & braced up the yards - |             |        |             |           |
| 2                                      |    |      |          |            |      |  |             |        |             |           |
| 3                                      |    |      |          |            |      |  |             |        |             |           |
| 4                                      |    |      |          |            |      |  |             |        |             |           |
| 5                                      |    |      |          |            |      |  |             |        |             |           |
| 6                                      |    |      |          |            |      |  |             |        |             |           |
| 7                                      | 7  | 1    |          |            |      |  |             |        |             |           |
| 8                                      | 7  |      |          |            |      |  |             |        |             |           |
| 9                                      | 7  | 1    |          |            |      |  |             |        |             |           |
| 10                                     | 7  |      |          |            |      |  |             |        |             |           |
| 11                                     | 7  |      |          |            |      |  |             |        |             |           |
| 12                                     | 7  |      |          |            |      |  |             |        |             |           |
| 1                                      | 7  |      |          |            |      |  |             |        |             |           |
| 2                                      | 7  |      |          |            |      |  |             |        |             |           |
| 3                                      | 7  |      |          |            |      |  |             |        |             |           |
| 4                                      | 7  |      |          |            |      |  |             |        |             |           |
| 5                                      | 7  |      |          |            |      |  |             |        |             |           |
| 6                                      | 7  |      |          |            |      |  |             |        |             |           |
| 7                                      | 7  |      |          |            |      |  |             |        |             |           |
| 8                                      | 7  |      |          |            |      |  |             |        |             |           |
| 9                                      | 7  |      |          |            |      |  |             |        |             |           |
| 10                                     | 7  |      |          |            |      |  |             |        |             |           |
| 11                                     | 7  |      |          |            |      |  |             |        |             |           |
| 12                                     | 7  |      |          |            |      |  |             |        |             |           |
| Course.                                |    |      | Dist.    | Diff. lat. | Dep. | Lat. by D. R.  | Lat. by Ob. | Varia. | Diff. Long. | Long. in. |
| S.E. by E                              |    |      | 143      | 59         | 130  | 39 25  | No Obs      |        | 2° 50       | 71 10     |



Ship This Vaking from New York towards Manila

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                       |
|----|----|-------|----------|--------|------|--------------------------------|
| 1  | 7  |       | SE 1/2 E | SE     |      | Commenced with strong          |
| 2  | 7  |       |          |        |      | breezes from the SE & cloudy-  |
| 3  | 7  |       |          |        |      | 4 PM took in top gallant sails |
| 4  | 7  |       |          |        |      | & double reefed the topsails-  |
| 5  | 6  |       |          |        |      | Midnight more moderate         |
| 6  | 6  |       |          |        |      | shook out the reefs from fore  |
| 7  | 6  |       | SE 1/2 E |        |      | & main topsails-               |
| 8  | 6  |       |          |        |      | 7 AM set fore & main top-      |
| 9  | 5  | 1     | SE       |        |      | gallant sails                  |
| 10 | 5  | 1     |          |        |      |                                |
| 11 | 5  | 1     | SE 1/2 E |        |      |                                |
| 12 | 5  | 1     |          |        |      |                                |
| 1  | 5  |       |          |        |      |                                |
| 2  | 5  |       |          |        |      |                                |
| 3  | 5  |       |          |        |      |                                |
| 4  | 5  | 1     | SE 1/2 E |        |      |                                |
| 5  | 6  |       |          |        |      |                                |
| 6  | 6  |       |          |        |      |                                |
| 7  | 7  |       | SE       |        |      |                                |
| 8  | 7  |       |          |        |      |                                |
| 9  | 7  |       |          |        |      |                                |
| 10 | 7  |       |          |        |      |                                |
| 11 | 7  |       |          |        |      |                                |
| 12 | 7  |       |          |        |      |                                |

| Course.  | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| SE 1/2 E | 146   | 1.53       | 90   |               | No Obs      |        | 1.55        | 69.15     |              |

| H. | K. | H. K. | Courses. | Winds.   | Lee. | Remarks.                    |
|----|----|-------|----------|----------|------|-----------------------------|
| 1  | 6  | 1     | SE       | SE 1/2 E |      | Commenced with strong       |
| 2  | 6  | 1     |          |          |      | breezes & passing clouds-   |
| 3  | 5  | 1     |          |          |      | 4 PM shook out all reefs &  |
| 4  | 5  | 1     |          |          |      | set Mizzen top gallant sail |
| 5  | 4  |       | SE       |          |      | Midnight tacked ship to     |
| 6  | 4  |       |          |          |      | SE-                         |
| 7  | 2  |       |          |          |      |                             |
| 8  | 2  |       | SE 1/2 E |          |      | Terminates with strong      |
| 9  | 2  |       |          |          |      | breezes & pleasant weather  |
| 10 | 2  |       | SE 1/2 E |          |      |                             |
| 11 | 2  |       |          |          |      |                             |
| 12 | 2  |       | SE 1/2 E |          |      |                             |
| 1  | 3  |       | SE 1/2 E | SE 1/2 E |      |                             |
| 2  | 4  |       |          |          |      |                             |
| 3  | 5  |       |          |          |      |                             |
| 4  | 6  |       | SE 1/2 E | SE 1/2 E |      |                             |
| 5  | 6  |       |          |          |      |                             |
| 6  | 6  |       |          |          |      |                             |
| 7  | 6  |       |          |          |      |                             |
| 8  | 6  |       |          |          |      |                             |
| 9  | 7  |       |          |          |      |                             |
| 10 | 7  |       | SE 1/2 E |          |      |                             |
| 11 | 7  |       |          |          |      |                             |
| 12 | 7  |       |          |          |      |                             |

| Course.  | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| SE 1/2 E | 114   | 1.13       | 80   |               | 38° North   | 1/2 W  | 1.41        | 67.34     |              |



Ship *Thos Perkins* from *New York* towards *Manila* -

| H. | K. | H.K. | Courses. | Winds.  | Lee. | Remarks.   |
|----|----|------|----------|---------|------|--|
| 1  | 7  |      | East     | SE by S |      | Commences with strong breezes & passing clouds - |
| 2  | 7  |      |          |         |      | 5 P.M. took in topgallant sails -                |
| 3  | 7  |      |          |         |      | 6 .. .. double reefed the topsails -             |
| 4  | 7  |      |          |         |      | 7 .. .. took in jib, spanker & main              |
| 5  | 7  |      |          |         |      | topmast stay sail -                              |
| 6  | 6  |      |          |         |      | 8 P.M. took in main sail & close                 |
| 7  | 4  |      |          |         |      | reefed the Mizzen topsail -                      |
| 8  | 4  |      |          |         |      | 11 P.M. took in Foresail & close                 |
| 9  | 4  |      |          |         |      | reefed the Top sails -                           |
| 10 | 4  |      |          |         |      | 3 A.M. Wind hauled to N.W.                       |
| 11 | 3  | 1    | E S E    | S S W   |      | set Foresail & let close reef from               |
| 12 | 3  | 1    |          |         |      | main topsail -                                   |
| 1  | 3  |      |          |         |      | 10 Let close reef from Fore top                  |
| 2  | 3  |      |          |         |      | sail -   |
| 3  | 3  |      |          |         |      | Ends with strong gales & passing rain squalls    |
| 4  | 5  |      |          |         |      |  |
| 5  | 7  |      |          |         |      |  |
| 6  | 7  |      |          |         |      |  |
| 7  | 7  |      |          |         |      |  |
| 8  | 7  |      |          |         |      |  |
| 9  | 8  |      |          |         |      |  |
| 10 | 8  |      |          |         |      |  |
| 11 | 8  |      |          |         |      |  |
| 12 | 8  |      |          |         |      |  |

| Course.      | Dist.      | Diff. lat. | Dep.       | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long.  | Long. in.     | Long. by Ob. |
|--------------|------------|------------|------------|---------------|-------------|----------|--------------|---------------|--------------|
| <i>E S E</i> | <i>134</i> | <i>21</i>  | <i>132</i> | <i>35..58</i> | <i>=</i>    | <i>=</i> | <i>2..46</i> | <i>64..48</i> |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                          |
|----|----|------|----------|--------|------|-----------------------------------|
| 1  | 10 |      | E S E    | S W    |      | Commences with strong             |
| 2  | 10 |      |          |        |      | gales & cloudy weather -          |
| 3  | 10 |      |          |        |      |                                   |
| 4  | 10 |      |          |        |      |                                   |
| 5  | 10 | 1    |          |        |      | 5 A.M. moderate - set mainsail,   |
| 6  | 10 | 1    |          |        |      | jib & Spencer - let out all reefs |
| 7  | 10 | 1    |          |        |      | from Topsails & set Topgallant    |
| 8  | 9  | 1    |          |        |      | sails - Brig in company stand     |
| 9  | 9  | 1    |          |        |      | ing E S E -                       |
| 10 | 9  | 1    |          |        |      |                                   |
| 11 | 9  | 1    |          |        |      | 8. set jib & Fore topmast stud-   |
| 12 | 9  | 1    |          |        |      | sing sail -                       |
| 1  | 8  |      |          |        |      | Ends with fine breezes & clou-    |
| 2  | 8  |      |          |        |      | dy weather                        |
| 3  | 8  |      |          |        |      |                                   |
| 4  | 8  |      |          |        |      |                                   |
| 5  | 8  |      |          |        |      |                                   |
| 6  | 8  |      |          |        |      |                                   |
| 7  | 8  |      |          |        |      |                                   |
| 8  | 8  |      |          |        |      |                                   |
| 9  | 9  |      |          |        |      |                                   |
| 10 | 9  |      |          |        |      |                                   |
| 11 | 9  |      |          |        |      |                                   |
| 12 | 9  |      |          |        |      |                                   |

| Course.      | Dist.      | Diff. lat.  | Dep.       | Lat. by D. R.  | Lat. by Ob.   | Varia.         | Diff. Long.   | Long. in.      | Long. by Ob. |
|--------------|------------|-------------|------------|----------------|---------------|----------------|---------------|----------------|--------------|
| <i>E S E</i> | <i>221</i> | <i>.42'</i> | <i>214</i> | <i>34° 16'</i> | <i>37..30</i> | <i>1 1/2 W</i> | <i>4° 10'</i> | <i>60° 29'</i> |              |



Ship *Thos Perkins* from *New York* towards *Manila* Monday Nov 25<sup>th</sup> 1844

| H. | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.  |
|----|----|-------|----------|------------|------|---|
| 1  | 10 | 1     | SE by E  | 4 to 4 1/2 |      | Commences with strong breeze from Westward & pleasant -   |
| 2  | 10 | 1     |          |            |      |   |
| 3  | 10 |       |          |            |      |   |
| 4  | 10 |       |          |            |      |   |
| 5  | 10 |       |          |            |      | 1 PM - set lower studding sail -  |
| 6  | 10 |       |          |            |      |   |
| 7  | 11 |       |          |            |      | 7 PM - took in lower & fore topmast studding sails, fore & mizen topgallant sails & spanker -   |
| 8  | 11 |       |          |            |      |   |
| 9  | 11 |       |          |            |      |   |
| 10 | 11 |       |          |            |      |   |
| 11 | 11 |       |          |            |      |   |
| 12 | 10 |       |          |            |      |   |
| 1  | 9  |       | SE 1/2 E | West       |      | 11 - strong breeze with heavy squalls - double reefed the foremast - Passed a Brig standing to the Eastward - Ends with strong gales & passing rain squalls - |
| 2  | 10 |       |          |            |      |   |
| 3  | 10 |       |          |            |      |   |
| 4  | 10 |       |          |            |      |   |
| 5  | 10 |       |          |            |      |   |
| 6  | 10 |       |          |            |      |   |
| 7  | 10 |       |          |            |      |   |
| 8  | 10 |       |          |            |      |   |
| 9  | 10 |       |          |            |      |   |
| 10 | 10 |       |          |            |      |   |
| 11 | 10 |       |          |            |      |   |
| 12 | 10 |       |          |            |      |   |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
|         | 245   |            |      |               | 36.40 N     | 1 1/2 W |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.  |
|----|----|-------|----------|--------|------|---|
| 1  | 10 |       | SE       | West   |      | Commences with strong gales & passing rain squalls -                            |
| 2  | 10 |       |          |        |      |   |
| 3  | 10 |       |          |        |      |   |
| 4  | 10 |       |          |        |      |   |
| 5  | 10 |       |          |        |      |   |
| 6  | 10 |       |          |        |      | 6 PM - Let lose reef from fore top sail & set Main topgallant sail              |
| 7  | 10 | 1     |          |        |      |   |
| 8  | 10 | 1     |          |        |      |   |
| 9  | 11 |       |          |        |      |   |
| 10 | 11 |       |          |        |      |   |
| 11 | 11 |       |          |        |      | Midnight - strong gales & passing rain squalls - took in Main topgallant sail - |
| 12 | 11 |       |          |        |      |   |
| 1  | 11 |       |          |        |      |   |
| 2  | 11 |       |          |        |      |   |
| 3  | 11 |       |          |        |      |   |
| 4  | 11 |       |          |        |      |   |
| 5  | 11 |       |          |        |      |   |
| 6  | 11 |       |          |        |      |   |
| 7  | 11 |       |          |        |      |   |
| 8  | 11 |       |          |        |      |   |
| 9  | 10 |       |          |        |      |   |
| 10 | 10 |       |          |        |      |   |
| 11 | 10 |       |          |        |      |   |
| 12 | 10 |       |          |        |      |   |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         | 253   |            |      |               | 34.44 N     |        |             |           |              |



*Ship The Tarkie from New York towards Manila.*

| H. | K. | ILK. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  | /  |      |          |        |      |          |
| 7  | /  |      |          |        |      |          |
| 8  | /  |      |          |        |      |          |
| 9  | /  |      |          |        |      |          |
| 10 | /  |      |          |        |      |          |
| 11 | /  |      |          |        |      |          |
| 12 | /  |      |          |        |      |          |
| 1  | /  |      |          |        |      |          |
| 2  | /  |      |          |        |      |          |
| 3  | /  |      |          |        |      |          |
| 4  | /  |      |          |        |      |          |
| 5  | /  |      |          |        |      |          |
| 6  | /  |      |          |        |      |          |
| 7  | /  |      |          |        |      |          |
| 8  | 6  |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         | 111   |            |      |               |             |        |             |           |              |

| H. | K. | ILK. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  | /  |      |          |        |      |          |
| 7  | /  |      |          |        |      |          |
| 8  | /  |      |          |        |      |          |
| 9  | /  |      |          |        |      |          |
| 10 | /  |      |          |        |      |          |
| 11 | /  |      |          |        |      |          |
| 12 | /  |      |          |        |      |          |
| 1  | /  |      |          |        |      |          |
| 2  | /  |      |          |        |      |          |
| 3  | /  |      |          |        |      |          |
| 4  | /  |      |          |        |      |          |
| 5  | /  |      |          |        |      |          |
| 6  | /  |      |          |        |      |          |
| 7  | /  |      |          |        |      |          |
| 8  | /  |      |          |        |      |          |
| 9  | /  |      |          |        |      |          |
| 10 | /  |      |          |        |      |          |
| 11 | /  |      |          |        |      |          |
| 12 | /  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         | 67    |            |      |               | 52-46.4     |        |             |           |              |



Ship *the "Dorchester"* from *New York* towards *St. John's*

| H.       | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |             |
|----------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|-------------|
| 1        | 4     |            |          |               |             |          |             |           |             |
| 2        | 3     |            |          |               |             |          |             |           |             |
| 3        | 3     |            |          |               |             |          |             |           |             |
| 4        | 3     |            |          |               |             |          |             |           |             |
| 5        | 3     |            |          |               |             |          |             |           |             |
| 6        | 3     |            |          |               |             |          |             |           |             |
| 7        | 4     |            |          |               |             |          |             |           |             |
| 8        | 4     |            |          |               |             |          |             |           |             |
| 9        | 4     |            |          |               |             |          |             |           |             |
| 10       | 4     |            |          |               |             |          |             |           |             |
| 11       | 4     |            |          |               |             |          |             |           |             |
| 12       | 4     |            |          |               |             |          |             |           |             |
| 1        | 3     |            |          |               |             |          |             |           |             |
| 2        | 3     |            |          |               |             |          |             |           |             |
| 3        | 3     |            |          |               |             |          |             |           |             |
| 4        | 3     |            |          |               |             |          |             |           |             |
| 5        | 3     | /          |          |               |             |          |             |           |             |
| 6        | 3     | /          |          |               |             |          |             |           |             |
| 7        | 3     | /          |          |               |             |          |             |           |             |
| 8        | 3     | /          |          |               |             |          |             |           |             |
| 9        | 3     | /          |          |               |             |          |             |           |             |
| 10       | 3     | /          |          |               |             |          |             |           |             |
| 11       | 3     | /          |          |               |             |          |             |           |             |
| 12       | 3     | /          |          |               |             |          |             |           |             |
| Courses. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long by Ob. |
|          |       |            |          |               | 52. 34      |          |             |           |             |

| H.       | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |             |
|----------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|-------------|
| 1        | 2     |            |          |               |             |          |             |           |             |
| 2        | 2     |            |          |               |             |          |             |           |             |
| 3        |       |            |          |               |             |          |             |           |             |
| 4        |       |            |          |               |             |          |             |           |             |
| 5        |       |            |          |               |             |          |             |           |             |
| 6        |       |            |          |               |             |          |             |           |             |
| 7        |       | /          |          |               |             |          |             |           |             |
| 8        |       | /          |          |               |             |          |             |           |             |
| 9        |       |            |          |               |             |          |             |           |             |
| 10       |       |            |          |               |             |          |             |           |             |
| 11       |       |            |          |               |             |          |             |           |             |
| 12       |       |            |          |               |             |          |             |           |             |
| 1        |       |            |          |               |             |          |             |           |             |
| 2        |       |            |          |               |             |          |             |           |             |
| 3        |       |            |          |               |             |          |             |           |             |
| 4        |       |            |          |               |             |          |             |           |             |
| 5        |       |            |          |               |             |          |             |           |             |
| 6        |       |            |          |               |             |          |             |           |             |
| 7        |       |            |          |               |             |          |             |           |             |
| 8        |       |            |          |               |             |          |             |           |             |
| 9        |       |            |          |               |             |          |             |           |             |
| 10       |       |            |          |               |             |          |             |           |             |
| 11       |       |            |          |               |             |          |             |           |             |
| 12       |       |            |          |               |             |          |             |           |             |
| Courses. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long by Ob. |
|          |       |            |          |               | 50. 44      |          |             |           |             |



from *San Diego* towards *San Pedro*

| H. | K. | H.K. | Courses.   | Winds.      | Lee. | Remarks.                           |
|----|----|------|------------|-------------|------|------------------------------------|
| 1  |    |      | <i>Blk</i> | <i>W</i>    |      | <i>Commenced with light breeze</i> |
| 2  |    |      |            |             |      | <i>the wind freshened</i>          |
| 3  |    |      |            |             |      | <i>the wind freshened</i>          |
| 4  |    |      |            |             |      | <i>the wind freshened</i>          |
| 5  | 2  |      |            | <i>Diff</i> |      | <i>the wind freshened</i>          |
| 6  | 2  |      |            |             |      | <i>the wind freshened</i>          |
| 7  | 2  |      |            |             |      | <i>the wind freshened</i>          |
| 8  | 2  |      |            |             |      | <i>the wind freshened</i>          |
| 9  | 2  |      |            |             |      | <i>the wind freshened</i>          |
| 10 | 3  |      |            |             |      | <i>the wind freshened</i>          |
| 11 | 5  |      |            |             |      | <i>the wind freshened</i>          |
| 12 | 3  |      |            |             |      | <i>the wind freshened</i>          |
| 1  | 3  |      |            |             |      | <i>the wind freshened</i>          |
| 2  | 3  |      |            |             |      | <i>the wind freshened</i>          |
| 3  | 3  |      |            |             |      | <i>the wind freshened</i>          |
| 4  | 3  |      |            |             |      | <i>the wind freshened</i>          |
| 5  | 4  |      |            |             |      | <i>the wind freshened</i>          |
| 6  | 7  |      |            |             |      | <i>the wind freshened</i>          |
| 7  | 5  |      |            |             |      | <i>the wind freshened</i>          |
| 8  | 5  |      |            |             |      | <i>the wind freshened</i>          |
| 9  | 4  |      |            |             |      | <i>the wind freshened</i>          |
| 10 | 4  |      |            |             |      | <i>the wind freshened</i>          |
| 11 | 4  |      |            |             |      | <i>the wind freshened</i>          |
| 12 | 4  |      |            |             |      | <i>the wind freshened</i>          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses.   | Winds.   | Lee. | Remarks.                           |
|----|----|------|------------|----------|------|------------------------------------|
| 1  |    |      | <i>Blk</i> | <i>W</i> |      | <i>Commenced with light breeze</i> |
| 2  |    |      |            |          |      | <i>the wind freshened</i>          |
| 3  |    |      |            |          |      | <i>the wind freshened</i>          |
| 4  |    |      |            |          |      | <i>the wind freshened</i>          |
| 5  | 1  |      | <i>Blk</i> | <i>W</i> |      | <i>Commenced with light breeze</i> |
| 6  | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 7  | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 8  | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 9  | 7  |      | <i>Blk</i> | <i>W</i> |      | <i>Commenced with light breeze</i> |
| 10 | 1  |      |            |          |      | <i>the wind freshened</i>          |
| 11 | 6  |      |            |          |      | <i>the wind freshened</i>          |
| 12 | 6  |      |            |          |      | <i>the wind freshened</i>          |
| 1  | 7  |      | <i>Blk</i> | <i>W</i> |      | <i>Commenced with light breeze</i> |
| 2  | 1  |      |            |          |      | <i>the wind freshened</i>          |
| 3  | 1  |      |            |          |      | <i>the wind freshened</i>          |
| 4  | 3  |      |            |          |      | <i>the wind freshened</i>          |
| 5  | 3  |      |            |          |      | <i>the wind freshened</i>          |
| 6  | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 7  | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 8  | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 9  | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 10 | 5  |      |            |          |      | <i>the wind freshened</i>          |
| 11 | 6  |      |            |          |      | <i>the wind freshened</i>          |
| 12 | 6  |      |            |          |      | <i>the wind freshened</i>          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.    | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|----------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | <i>31.46.5</i> |        |             |           |              |



*Ship The "Duke" from New York towards the West*

| H. | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|----|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1  |    |       |          |            |      |               |             |        |             |           |              |
| 2  |    |       |          |            |      |               |             |        |             |           |              |
| 3  |    |       |          |            |      |               |             |        |             |           |              |
| 4  |    |       |          |            |      |               |             |        |             |           |              |
| 5  |    |       |          |            |      |               |             |        |             |           |              |
| 6  |    |       |          |            |      |               |             |        |             |           |              |
| 7  |    |       |          |            |      |               |             |        |             |           |              |
| 8  |    |       |          |            |      |               |             |        |             |           |              |
| 9  |    |       |          |            |      |               |             |        |             |           |              |
| 10 |    |       |          |            |      |               |             |        |             |           |              |
| 11 |    |       |          |            |      |               |             |        |             |           |              |
| 12 |    |       |          |            |      |               |             |        |             |           |              |
| 1  |    |       |          |            |      |               |             |        |             |           |              |
| 2  |    |       |          |            |      |               |             |        |             |           |              |
| 3  |    |       |          |            |      |               |             |        |             |           |              |
| 4  |    |       |          |            |      |               |             |        |             |           |              |
| 5  |    |       |          |            |      |               |             |        |             |           |              |
| 6  |    |       |          |            |      |               |             |        |             |           |              |
| 7  |    |       |          |            |      |               |             |        |             |           |              |
| 8  |    |       |          |            |      |               |             |        |             |           |              |
| 9  |    |       |          |            |      |               |             |        |             |           |              |
| 10 |    |       |          |            |      |               |             |        |             |           |              |
| 11 |    |       |          |            |      |               |             |        |             |           |              |
| 12 |    |       |          |            |      |               |             |        |             |           |              |
|    |    |       | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|    |    |       |          |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee.       | Remarks. |               |             |        |             |           |             |
|----|----|-------|----------|--------|------------|----------|---------------|-------------|--------|-------------|-----------|-------------|
| 1  |    |       |          |        |            |          |               |             |        |             |           |             |
| 2  |    |       |          |        |            |          |               |             |        |             |           |             |
| 3  |    |       |          |        |            |          |               |             |        |             |           |             |
| 4  |    |       |          |        |            |          |               |             |        |             |           |             |
| 5  |    |       |          |        |            |          |               |             |        |             |           |             |
| 6  |    |       |          |        |            |          |               |             |        |             |           |             |
| 7  |    |       |          |        |            |          |               |             |        |             |           |             |
| 8  |    |       |          |        |            |          |               |             |        |             |           |             |
| 9  |    |       |          |        |            |          |               |             |        |             |           |             |
| 10 |    |       |          |        |            |          |               |             |        |             |           |             |
| 11 |    |       |          |        |            |          |               |             |        |             |           |             |
| 12 |    |       |          |        |            |          |               |             |        |             |           |             |
| 1  |    |       |          |        |            |          |               |             |        |             |           |             |
| 2  |    |       |          |        |            |          |               |             |        |             |           |             |
| 3  |    |       |          |        |            |          |               |             |        |             |           |             |
| 4  |    |       |          |        |            |          |               |             |        |             |           |             |
| 5  |    |       |          |        |            |          |               |             |        |             |           |             |
| 6  |    |       |          |        |            |          |               |             |        |             |           |             |
| 7  |    |       |          |        |            |          |               |             |        |             |           |             |
| 8  |    |       |          |        |            |          |               |             |        |             |           |             |
| 9  |    |       |          |        |            |          |               |             |        |             |           |             |
| 10 |    |       |          |        |            |          |               |             |        |             |           |             |
| 11 |    |       |          |        |            |          |               |             |        |             |           |             |
| 12 |    |       |          |        |            |          |               |             |        |             |           |             |
|    |    |       | Course.  | Dist.  | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long by Ob. |
|    |    |       |          |        |            |          |               |             |        |             |           |             |



Ship *John Perkins* from *New York* towards *Hamlet*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 3  |      |          |        |      |          |
| 2  | 3  |      |          |        |      |          |
| 3  | 3  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  | 3  |      |          |        |      |          |
| 6  | 3  |      |          |        |      |          |
| 7  | 3  |      |          |        |      |          |
| 8  | 3  |      |          |        |      |          |
| 9  | 3  |      |          |        |      |          |
| 10 | 3  |      |          |        |      |          |
| 11 | 4  |      |          |        |      |          |
| 12 | 4  |      |          |        |      |          |
| 1  | 5  |      |          |        |      |          |
| 2  | 5  |      |          |        |      |          |
| 3  | 5  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 5  |      |          |        |      |          |
| 6  | 5  |      |          |        |      |          |
| 7  | 5  |      |          |        |      |          |
| 8  | 5  |      |          |        |      |          |
| 9  | 5  |      |          |        |      |          |
| 10 | 5  |      |          |        |      |          |
| 11 | 6  |      |          |        |      |          |
| 12 | 6  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



Ship

5<sup>th</sup> Barkin from New York towards Manila

| H. | K. | H. K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 1  |       |          |        |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 3  |       |          |        |      |          |
| 4  | 6  |       |          |        |      |          |
| 5  | 6  |       |          |        |      |          |
| 6  | 6  |       |          |        |      |          |
| 7  | 6  |       |          |        |      |          |
| 8  | 6  |       |          |        |      |          |
| 9  | 7  |       |          |        |      |          |
| 10 | 8  |       |          |        |      |          |
| 11 | 7  |       |          |        |      |          |
| 12 | 7  |       |          |        |      |          |
| 1  | 1  |       |          |        |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 2  |       |          |        |      |          |
| 4  | 4  |       |          |        |      |          |
| 5  | 4  |       |          |        |      |          |
| 6  | 4  |       |          |        |      |          |
| 7  | 4  |       |          |        |      |          |
| 8  | 7  |       |          |        |      |          |
| 9  | 7  |       |          |        |      |          |
| 10 | 7  |       |          |        |      |          |
| 11 | 4  |       |          |        |      |          |
| 12 | 4  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 100     | 105   | 15         | 64   | 20.00         | 2.4         |        | 10          | 100       |              |

| H. | K. | H. K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 1  | 1     |          |        |      |          |
| 2  | 1  | 1     |          |        |      |          |
| 3  | 1  |       |          |        |      |          |
| 4  | 2  |       |          |        |      |          |
| 5  | 2  |       |          |        |      |          |
| 6  | 3  |       |          |        |      |          |
| 7  | 3  | 1     |          |        |      |          |
| 8  | 3  |       |          |        |      |          |
| 9  | 3  |       |          |        |      |          |
| 10 | 3  |       |          |        |      |          |
| 11 | 3  |       |          |        |      |          |
| 12 | 3  |       |          |        |      |          |
| 1  | 2  |       |          |        |      |          |
| 2  | 2  |       |          |        |      |          |
| 3  | 2  |       |          |        |      |          |
| 4  | 2  |       |          |        |      |          |
| 5  | 2  |       |          |        |      |          |
| 6  | 2  |       |          |        |      |          |
| 7  | 2  |       |          |        |      |          |
| 8  | 3  |       |          |        |      |          |
| 9  | 4  |       |          |        |      |          |
| 10 | 4  |       |          |        |      |          |
| 11 | 4  |       |          |        |      |          |
| 12 | 2  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 100     | 61    | 60         | 1    | 13.07         | 1/2 pt      |        | 5           | 100       |              |



*Ship the Towing from New York towards Manila*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 4  |      |          |        |      |          |
| 2  | 4  |      |          |        |      |          |
| 3  | 3  |      |          |        |      |          |
| 4  | 6  |      |          |        |      |          |
| 5  | 7  |      |          |        |      |          |
| 6  | 7  |      |          |        |      |          |
| 7  | 7  | 1    |          |        |      |          |
| 8  | 7  | 1    |          |        |      |          |
| 9  | 7  | 1    |          |        |      |          |
| 10 | 7  | 1    |          |        |      |          |
| 11 | 7  |      |          |        |      |          |
| 12 | 7  |      |          |        |      |          |
| 1  | 7  |      |          |        |      |          |
| 2  | 7  |      |          |        |      |          |
| 3  | 6  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 5  |      |          |        |      |          |
| 6  | 5  |      |          |        |      |          |
| 7  | 7  |      |          |        |      |          |
| 8  | 7  |      |          |        |      |          |
| 9  | 7  |      |          |        |      |          |
| 10 | 5  |      |          |        |      |          |
| 11 | 5  |      |          |        |      |          |
| 12 | 4  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         | 147   | 43         | 32   | 24.38         | 24.3        |        | 5.5         | 77        |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 7  |      |          |        |      |          |
| 2  | 7  |      |          |        |      |          |
| 3  | 7  |      |          |        |      |          |
| 4  | 7  |      |          |        |      |          |
| 5  | 7  |      |          |        |      |          |
| 6  | 6  |      |          |        |      |          |
| 7  | 5  |      |          |        |      |          |
| 8  | 5  |      |          |        |      |          |
| 9  | 7  |      |          |        |      |          |
| 10 | 7  |      |          |        |      |          |
| 11 | 7  |      |          |        |      |          |
| 12 | 6  |      |          |        |      |          |
| 1  | 7  |      |          |        |      |          |
| 2  | 7  |      |          |        |      |          |
| 3  | 7  |      |          |        |      |          |
| 4  | 7  |      |          |        |      |          |
| 5  | 7  |      |          |        |      |          |
| 6  | 7  |      |          |        |      |          |
| 7  | 7  |      |          |        |      |          |
| 8  | 7  |      |          |        |      |          |
| 9  | 7  |      |          |        |      |          |
| 10 | 7  |      |          |        |      |          |
| 11 | 7  |      |          |        |      |          |
| 12 | 7  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 76      | 101   | 139        | 18   | 21.51         | 21.43       | 2.15   | 20          | 71.15     |              |



*Ship ... from ... towards ...*

| H. | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|----|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1  |    |       |          |            |      |               |             |        |             |           |              |
| 2  |    |       |          |            |      |               |             |        |             |           |              |
| 3  | /  |       |          |            |      |               |             |        |             |           |              |
| 4  | /  |       |          |            |      |               |             |        |             |           |              |
| 5  | /  |       |          |            |      |               |             |        |             |           |              |
| 6  | /  |       |          |            |      |               |             |        |             |           |              |
| 7  |    |       |          |            |      |               |             |        |             |           |              |
| 8  |    |       |          |            |      |               |             |        |             |           |              |
| 9  |    |       |          |            |      |               |             |        |             |           |              |
| 10 |    |       |          |            |      |               |             |        |             |           |              |
| 11 |    |       |          |            |      |               |             |        |             |           |              |
| 12 |    |       |          |            |      |               |             |        |             |           |              |
| 1  |    |       |          |            |      |               |             |        |             |           |              |
| 2  |    |       |          |            |      |               |             |        |             |           |              |
| 3  |    |       |          |            |      |               |             |        |             |           |              |
| 4  |    |       |          |            |      |               |             |        |             |           |              |
| 5  |    |       |          |            |      |               |             |        |             |           |              |
| 6  |    |       |          |            |      |               |             |        |             |           |              |
| 7  |    |       |          |            |      |               |             |        |             |           |              |
| 8  |    |       |          |            |      |               |             |        |             |           |              |
| 9  |    |       |          |            |      |               |             |        |             |           |              |
| 10 |    |       |          |            |      |               |             |        |             |           |              |
| 11 |    |       |          |            |      |               |             |        |             |           |              |
| 12 |    |       |          |            |      |               |             |        |             |           |              |
|    |    |       | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|    |    |       | 100      | 2 25       | 1 1  | 17.59         | 18.22       | 24     | 85          | 123.      |              |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.  |       |    |    |       |  |
|---------|----|-------|----------|------------|------|---|-------|----|----|-------|--|
| 1       | /  | /     |          | East       |      |   |       |    |    |       |  |
| 2       | /  | /     |          |            |      |   |       |    |    |       |  |
| 3       | /  | /     |          |            |      |   |       |    |    |       |  |
| 4       | /  | /     |          |            |      |   |       |    |    |       |  |
| 5       | /  | /     |          |            |      |   |       |    |    |       |  |
| 6       | /  | /     |          |            |      |   |       |    |    |       |  |
| 7       | /  | /     |          |            |      |   |       |    |    |       |  |
| 8       | /  | /     |          |            |      |   |       |    |    |       |  |
| 9       | /  | /     |          |            |      |   |       |    |    |       |  |
| 10      | /  | /     |          |            |      |   |       |    |    |       |  |
| 11      | /0 | /0    |          |            |      |   |       |    |    |       |  |
| 12      | /0 | /0    |          |            |      |   |       |    |    |       |  |
| 1       | /  | /     |          |            |      |   |       |    |    |       |  |
| 2       | /  | /     |          |            |      |   |       |    |    |       |  |
| 3       | /  | /     |          |            |      |   |       |    |    |       |  |
| 4       | /  | /     |          |            |      |   |       |    |    |       |  |
| 5       | /  | /     |          |            |      |   |       |    |    |       |  |
| 6       | /  | /     |          |            |      |   |       |    |    |       |  |
| 7       | /  | /     |          |            |      |   |       |    |    |       |  |
| 8       | /  | /     |          |            |      |   |       |    |    |       |  |
| 9       | /  | /     |          |            |      |   |       |    |    |       |  |
| 10      | /  | /     |          |            |      |   |       |    |    |       |  |
| 11      | /  | /     |          |            |      |   |       |    |    |       |  |
| 12      | /  | /     |          |            |      |   |       |    |    |       |  |
| <hr/>   |    |       |          |            |      |   |       |    |    |       |  |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D.R.   Lat. by Ob.   Varia.   Diff. Long.   Long. in.   Long by Ob. |       |    |    |       |  |
| 120     |    |       | 114      | 2 06       | 85   | 14.48   | 15.40 | 14 | 89 | 27.54 |  |



| Ship taken from New York towards Manila - |    |       |            |        |                       |                                      |        |             |           |              |
|---|----|-------|------------|--------|-----------------------|--------------------------------------|--------|-------------|-----------|--------------|
| H.  | K. | H.K.  | Courses.   | Winds. | Lee.                  | Remarks. Friday Dec 13 1844          |        |             |           |              |
| 1   | 1  |       |            |        |                       | Commenced with strong breeze         |        |             |           |              |
| 2   | 1  |       |            |        |                       | pleasant weather -                   |        |             |           |              |
| 3   | 1  |       |            |        |                       | at 11 AM set the main royal & flying |        |             |           |              |
| 4   | 1  |       |            |        |                       | jib sail ahead to starboard          |        |             |           |              |
| 5   | 1  |       |            |        |                       | and -                                |        |             |           |              |
| 6   | 1  |       |            |        |                       | at 1 PM set main royal & flying      |        |             |           |              |
| 7   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 8   | 1  |       |            |        |                       | at 4 PM set main royal -             |        |             |           |              |
| 9   | 1  |       |            |        |                       | and pleasant, with fine breeze       |        |             |           |              |
| 10  | 1  |       |            |        |                       |                                      |        |             |           |              |
| 11  | 1  |       |            |        |                       |                                      |        |             |           |              |
| 12  | 1  |       |            |        |                       |                                      |        |             |           |              |
| <hr/>                                     |    |       |            |        |                       |                                      |        |             |           |              |
| Course.                                   |    | Dist. | Diff. lat. | Dep.   | Lat. by D. R.         | Lat. by Ob.                          | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
| 70  |    | 116   | P.3        | 91     | N. 40                 | 1. 52 30 N. 12 1/2 E                 | 94     | 26 10.      |           |              |
| H.  | K. | H.K.  | Courses.   | Winds. | Lee.                  | Remarks. Saturday Dec 14 1844        |        |             |           |              |
| 1   | 1  |       | Drift      | but    |                       | Commenced with fresh breeze          |        |             |           |              |
| 2   | 1  |       |            |        |                       | pleasant weather - set the royal     |        |             |           |              |
| 3   | 1  |       |            |        |                       | at 11 AM set the royal & flying      |        |             |           |              |
| 4   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 5   | 1  |       |            |        |                       | at 1 PM set the royal & flying       |        |             |           |              |
| 6   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 7   | 1  |       |            |        |                       | at 4 PM set the royal & flying       |        |             |           |              |
| 8   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 9   | 1  |       |            |        |                       | at 7 PM set the royal & flying       |        |             |           |              |
| 10  | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 11  | 1  |       |            |        |                       | at 10 PM set the royal & flying      |        |             |           |              |
| 12  | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 1   | 1  |       |            |        |                       | at 1 PM set the royal & flying       |        |             |           |              |
| 2   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 3   | 1  |       |            |        |                       | at 4 PM set the royal & flying       |        |             |           |              |
| 4   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 5   | 1  |       |            |        |                       | at 7 PM set the royal & flying       |        |             |           |              |
| 6   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 7   | 1  |       |            |        |                       | at 10 PM set the royal & flying      |        |             |           |              |
| 8   | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 9   | 1  |       |            |        |                       | at 1 PM set the royal & flying       |        |             |           |              |
| 10  | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| 11  | 1  |       |            |        |                       | at 4 PM set the royal & flying       |        |             |           |              |
| 12  | 1  |       |            |        |                       | jib -                                |        |             |           |              |
| <hr/>                                     |    |       |            |        |                       |                                      |        |             |           |              |
| Course.                                   |    | Dist. | Diff. lat. | Dep.   | Lat. by D. R.         | Lat. by Ob.                          | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
| 310                                       |    | 212   | 3.01       | 109    | N. 31 1/2 E. 12 1/2 E | 3/4 pt                               | 1.51   | 24.19       |           |              |



*Ship ... from ... towards ...*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 9  |       |          |        |      |          |
| 2  | 6  |       |          |        |      |          |
| 3  | 1  |       |          |        |      |          |
| 4  | 1  |       |          |        |      |          |
| 5  | 9  |       |          |        |      |          |
| 6  | 9  |       |          |        |      |          |
| 7  | 5  |       |          |        |      |          |
| 8  | 5  |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 | 2  |       |          |        |      |          |
| 12 | 1  |       |          |        |      |          |
| 1  | 1  |       |          |        |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 2  |       |          |        |      |          |
| 4  | 1  |       |          |        |      |          |
| 5  | 1  |       |          |        |      |          |
| 6  | 2  |       |          |        |      |          |
| 7  | 3  |       |          |        |      |          |
| 8  | 3  |       |          |        |      |          |
| 9  | 4  |       |          |        |      |          |
| 10 | 4  |       |          |        |      |          |
| 11 | 4  |       |          |        |      |          |
| 12 | 4  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 5.190   | 110   | 1.10       | 11   | 5.05          | 5.051       | 1/4 E  | 1.10        | 50.11     |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 5  |       |          |        |      |          |
| 2  | 6  |       |          |        |      |          |
| 3  | 6  |       |          |        |      |          |
| 4  | 6  |       |          |        |      |          |
| 5  | 6  |       |          |        |      |          |
| 6  | 6  |       |          |        |      |          |
| 7  | 6  |       |          |        |      |          |
| 8  | 6  |       |          |        |      |          |
| 9  | 6  |       |          |        |      |          |
| 10 | 1  |       |          |        |      |          |
| 11 | 1  |       |          |        |      |          |
| 12 | 1  |       |          |        |      |          |
| 1  | 6  |       |          |        |      |          |
| 2  | 6  |       |          |        |      |          |
| 3  | 6  |       |          |        |      |          |
| 4  | 6  |       |          |        |      |          |
| 5  | 1  |       |          |        |      |          |
| 6  | 1  |       |          |        |      |          |
| 7  | 1  |       |          |        |      |          |
| 8  | 1  |       |          |        |      |          |
| 9  | 1  |       |          |        |      |          |
| 10 | 6  |       |          |        |      |          |
| 11 | 6  |       |          |        |      |          |
| 12 | 6  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 308     | 110   | 1.10       | 11   | 5.11.20       | 5.21.3      | 3/4 E  | 1.10        | 50.46     |              |



if it is to rise from 1000 ft. to 10000 ft. towards the south.

| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 6  |      |          |        |      |          |
| 2  | 6  |      |          |        |      |          |
| 3  | 6  |      |          |        |      |          |
| 4  | 6  |      |          |        |      |          |
| 5  | 6  | 1    |          |        |      |          |
| 6  | 6  | 1    |          |        |      |          |
| 7  | 6  |      |          |        |      |          |
| 8  | 6  |      |          |        |      |          |
| 9  | 3  |      |          |        |      |          |
| 10 | 3  |      |          |        |      |          |
| 11 | 3  |      |          |        |      |          |
| 12 | 3  |      |          |        |      |          |
| 1  | 4  |      |          |        |      |          |
| 2  | 3  |      |          |        |      |          |
| 3  | 3  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  | 3  |      |          |        |      |          |
| 8  | 3  |      |          |        |      |          |
| 9  | 4  |      |          |        |      |          |
| 10 | 4  |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 | 3  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 40      | 10    | 10         | 7    | 41.1          | 43.1        | 74.1   | 17          | 24.7      |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks.             |
|----|----|------|----------|--------|------|----------------------|
| 1  | 5  |      | 1st      |        |      | 1st course - 1st day |
| 2  | 5  |      |          |        |      |                      |
| 3  | 5  |      |          |        |      |                      |
| 4  | 5  |      |          |        |      |                      |
| 5  | 5  |      |          |        |      |                      |
| 6  | 5  |      |          |        |      |                      |
| 7  | 5  |      |          |        |      |                      |
| 8  | 5  |      |          |        |      |                      |
| 9  | 5  |      |          |        |      |                      |
| 10 | 5  |      |          |        |      |                      |
| 11 | 5  |      |          |        |      |                      |
| 12 | 5  |      |          |        |      |                      |
| 1  | 5  |      |          |        |      |                      |
| 2  | 5  |      |          |        |      |                      |
| 3  | 5  |      |          |        |      |                      |
| 4  | 5  |      |          |        |      |                      |
| 5  | 5  |      |          |        |      |                      |
| 6  | 5  |      |          |        |      |                      |
| 7  | 5  |      |          |        |      |                      |
| 8  | 5  |      |          |        |      |                      |
| 9  | 5  |      |          |        |      |                      |
| 10 | 5  |      |          |        |      |                      |
| 11 | 5  |      |          |        |      |                      |
| 12 | 5  |      |          |        |      |                      |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.           | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|------------------|-------------|-----------|--------------|
| 41 N    | 126   | 12         | 96   | 2...15        | 2...02 N    | $3\frac{1}{4}$ E | 97          | 21.64     |              |



Ship *Thos. Manning* from *...* towards *...*

| H. | K. | H. K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 6  |       |          |        |      |          |
| 2  | 2  |       |          |        |      |          |
| 3  | 4  |       |          |        |      |          |
| 4  | 4  |       |          |        |      |          |
| 5  | 4  |       |          |        |      |          |
| 6  | 4  |       |          |        |      |          |
| 7  | 4  |       |          |        |      |          |
| 8  | 4  | 1     |          |        |      |          |
| 9  | 2  |       |          |        |      |          |
| 10 | 2  |       |          |        |      |          |
| 11 | 5  |       |          |        |      |          |
| 12 | 3  |       |          |        |      |          |
| 1  | 3  |       |          |        |      |          |
| 2  | 6  |       |          |        |      |          |
| 3  | 6  |       |          |        |      |          |
| 4  | 6  |       |          |        |      |          |
| 5  | 6  |       |          |        |      |          |
| 6  | 6  |       |          |        |      |          |
| 7  | 6  |       |          |        |      |          |
| 8  | 6  |       |          |        |      |          |
| 9  | 6  |       |          |        |      |          |
| 10 | 6  |       |          |        |      |          |
| 11 | 6  |       |          |        |      |          |
| 12 | 6  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 37.1    | 136   | 8          | 80   | 41.1          | 61          | 1.1    | 20'         | 84'       |              |

| H. | K. | H. K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 6  |       |          |        |      |          |
| 2  | 6  |       |          |        |      |          |
| 3  | 6  |       |          |        |      |          |
| 4  | 5  | 1     |          |        |      |          |
| 5  | 5  | 1     |          |        |      |          |
| 6  | 5  | 1     |          |        |      |          |
| 7  | 2  |       |          |        |      |          |
| 8  | 2  |       |          |        |      |          |
| 9  | 6  |       |          |        |      |          |
| 10 | 6  | 1     |          |        |      |          |
| 11 | 6  | 1     |          |        |      |          |
| 12 | 6  | 1     |          |        |      |          |
| 1  | 6  |       |          |        |      |          |
| 2  | 6  |       |          |        |      |          |
| 3  | 6  |       |          |        |      |          |
| 4  | 6  |       |          |        |      |          |
| 5  | 6  |       |          |        |      |          |
| 6  | 6  |       |          |        |      |          |
| 7  | 6  |       |          |        |      |          |
| 8  | 6  |       |          |        |      |          |
| 9  | 6  |       |          |        |      |          |
| 10 | 6  |       |          |        |      |          |
| 11 | 6  |       |          |        |      |          |
| 12 | 6  |       |          |        |      |          |

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| 92.8    | 39'   | 20'        | 15   | 2.6           | 2.42        | 1.18   | 75'         | 25.99'    |              |



| from <i>from</i> towards <i>towards</i> |    |      |          |        |      |                                    |  |  |  |  |  |
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| H.                                      | K. | H.K. | Courses. | Winds. | Lee. | Remarks. <i>Monday Dec 21 1844</i> |  |  |  |  |  |
| 1                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 2                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 3                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 4                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 5                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 6                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 7                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 8                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 9                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 10                                      | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 11                                      | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 12                                      | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 1                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 2                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 3                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 4                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 5                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 6                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 7                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 8                                       | 7  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 9                                       | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 10                                      | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 11                                      | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| 12                                      | 6  | 1    |          |        |      | <i>... with ...</i>                |  |  |  |  |  |
| <i>Current 18 miles N. N. E.</i>        |    |      |          |        |      |                                    |  |  |  |  |  |
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|   |    |      |          |        |      |                                    |  |  |  |  |  |
|   |    |      |          |        |      |                                    |  |  |  |  |  |
|   |    |      |          |        |      |                                    |  |  |  |  |  |
|   |    |      |          |        |      |                                    |  |  |  |  |  |
|   |    |      |          |        |      |                                    |  |  |  |  |  |
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|   |    |      |          |        |      |                                    |  |  |  |  |  |



Ship The Tuckering from sea Lake towards Havana —

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | /  |       |          |        |      |          |
| 2  | /  |       |          |        |      |          |
| 3  | /  |       |          |        |      |          |
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| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Dist. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| 112     | 112'  | 112'       | 1'   | 11° 31'       | 11° 48'     | 17° 11' | 1'          | 44'       |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
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| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Dist. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| 112     | 196'  | 196'       | 3'   | 15° 04'       | 15° 21'     | 16° 17' | 4'          | 2444'     |              |



| from San Francisco towards Hawaii |       |            |          |               |             |          |             |           |              |  |
|-----------------------------------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|
| H.                                | K.    | H.K.       | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |  |
| 1                                 |       |            |          |               |             |          |             |           |              |  |
| 2                                 |       |            |          |               |             |          |             |           |              |  |
| 3                                 |       |            |          |               |             |          |             |           |              |  |
| 4                                 |       |            |          |               |             |          |             |           |              |  |
| 5                                 |       |            |          |               |             |          |             |           |              |  |
| 6                                 |       |            |          |               |             |          |             |           |              |  |
| 7                                 |       |            |          |               |             |          |             |           |              |  |
| 8                                 |       |            |          |               |             |          |             |           |              |  |
| 9                                 |       |            |          |               |             |          |             |           |              |  |
| 10                                |       |            |          |               |             |          |             |           |              |  |
| 11                                |       |            |          |               |             |          |             |           |              |  |
| 12                                |       |            |          |               |             |          |             |           |              |  |
| 1                                 |       |            |          |               |             |          |             |           |              |  |
| 2                                 |       |            |          |               |             |          |             |           |              |  |
| 3                                 |       |            |          |               |             |          |             |           |              |  |
| 4                                 |       |            |          |               |             |          |             |           |              |  |
| 5                                 |       |            |          |               |             |          |             |           |              |  |
| 6                                 |       |            |          |               |             |          |             |           |              |  |
| 7                                 |       |            |          |               |             |          |             |           |              |  |
| 8                                 |       |            |          |               |             |          |             |           |              |  |
| 9                                 |       |            |          |               |             |          |             |           |              |  |
| 10                                |       |            |          |               |             |          |             |           |              |  |
| 11                                |       |            |          |               |             |          |             |           |              |  |
| 12                                |       |            |          |               |             |          |             |           |              |  |
| Course.                           | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |
| 5111                              | 144   | 30'11"     | 12'      | 11° 5'        | 11° 7'      | 1' 11"   |             | 54° 47'   |              |  |
| H.                                | K.    | H.K.       | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |  |
| 1                                 |       |            |          |               |             |          |             |           |              |  |
| 2                                 |       |            |          |               |             |          |             |           |              |  |
| 3                                 |       |            |          |               |             |          |             |           |              |  |
| 4                                 |       |            |          |               |             |          |             |           |              |  |
| 5                                 |       |            |          |               |             |          |             |           |              |  |
| 6                                 |       |            |          |               |             |          |             |           |              |  |
| 7                                 |       |            |          |               |             |          |             |           |              |  |
| 8                                 |       |            |          |               |             |          |             |           |              |  |
| 9                                 |       |            |          |               |             |          |             |           |              |  |
| 10                                |       |            |          |               |             |          |             |           |              |  |
| 11                                |       |            |          |               |             |          |             |           |              |  |
| 12                                |       |            |          |               |             |          |             |           |              |  |
| 1                                 |       |            |          |               |             |          |             |           |              |  |
| 2                                 |       |            |          |               |             |          |             |           |              |  |
| 3                                 |       |            |          |               |             |          |             |           |              |  |
| 4                                 |       |            |          |               |             |          |             |           |              |  |
| 5                                 |       |            |          |               |             |          |             |           |              |  |
| 6                                 |       |            |          |               |             |          |             |           |              |  |
| 7                                 |       |            |          |               |             |          |             |           |              |  |
| 8                                 |       |            |          |               |             |          |             |           |              |  |
| 9                                 |       |            |          |               |             |          |             |           |              |  |
| 10                                |       |            |          |               |             |          |             |           |              |  |
| 11                                |       |            |          |               |             |          |             |           |              |  |
| 12                                |       |            |          |               |             |          |             |           |              |  |
| Course.                           | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |
| 5111                              | 161'  | 15''       | 14'      | 21° 0'        | 21° 28'     | 1' 44"   | 15'         | 23° 12'   |              |  |



from                      towards

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                 |
|----|----|-------|----------|--------|------|--------------------------|
| 1  | 4  |       |          |        |      | Commenced at 10 o'clock. |
| 2  | 4  |       |          |        |      | at 11 o'clock.           |
| 3  | 4  |       |          |        |      | at 12 o'clock.           |
| 4  | 4  |       |          |        |      | at 1 o'clock.            |
| 5  | 3  |       |          |        |      | at 2 o'clock.            |
| 6  | 3  |       |          |        |      | at 3 o'clock.            |
| 7  | 3  |       |          |        |      | at 4 o'clock.            |
| 8  | 3  |       |          |        |      | at 5 o'clock.            |
| 9  | 3  |       |          |        |      | at 6 o'clock.            |
| 10 | 3  | 1     | 1        |        |      | at 7 o'clock.            |
| 11 | 3  | 1     | 1        |        |      | at 8 o'clock.            |
| 12 | 3  | 1     | 1        |        |      | at 9 o'clock.            |
| 1  | 3  | 1     | 1        |        |      | at 10 o'clock.           |
| 2  | 3  | 1     | 1        |        |      | at 11 o'clock.           |
| 3  | 3  | 1     | 1        |        |      | at 12 o'clock.           |
| 4  | 3  | 1     | 1        |        |      | at 1 o'clock.            |
| 5  | 3  |       |          |        |      | at 2 o'clock.            |
| 6  | 3  |       |          |        |      | at 3 o'clock.            |
| 7  | 3  |       |          |        |      | at 4 o'clock.            |
| 8  | 3  |       |          |        |      | at 5 o'clock.            |
| 9  | 3  |       |          |        |      | at 6 o'clock.            |
| 10 | 3  |       |          |        |      | at 7 o'clock.            |
| 11 | 3  |       |          |        |      | at 8 o'clock.            |
| 12 | 3  |       |          |        |      | at 9 o'clock.            |

| Course | Dist. | Diff. Lat. | Long. | Lat. by D. R. | Lat. by Obs. | Varia. | Diff. Long. | Long. in. | Long. by Obs. |
|--------|-------|------------|-------|---------------|--------------|--------|-------------|-----------|---------------|
| 140    | 6.1   | 30         | 01'   | 22° 01'       | 22° 03'      | 24 1/2 |             |           |               |

| II. | R. | W. K. | Cours. s. | Winds. | Lee. | Remarks. |
|-----|----|-------|-----------|--------|------|----------|
| 1   |    |       |           | 6.0    |      | 10.00    |
| 2   |    |       |           | 6.0    |      | 10.00    |
| 3   |    |       |           | 6.0    |      | 10.00    |
| 4   |    |       |           | 6.0    |      | 10.00    |
| 5   |    |       |           | 6.0    |      | 10.00    |
| 6   |    |       |           | 6.0    |      | 10.00    |
| 7   |    |       |           | 6.0    |      | 10.00    |
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| 11  |    |       |           | 6.0    |      | 10.00    |
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| 10  |    |       |           | 6.0    |      | 10.00    |
| 11  |    |       |           | 6.0    |      | 10.00    |
| 12  |    |       |           | 6.0    |      | 10.00    |

| Comp.    | Dir. | Diff. lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long by Ob. |
|----------|------|------------|------|--------------|-------------|---------|-------------|-----------|-------------|
| 11.11.11 | 11   | 11         | 11   | 23° 31'      | 23° 31'     | 1 pt 15 |             |           |             |



| from    |       | towards    |          |               |             |          |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| H.      | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 1     |            |          |               |             |          |             |           |              |
| 3       | 1     |            |          |               |             |          |             |           |              |
| 4       | 1     |            |          |               |             |          |             |           |              |
| 5       | 1     |            |          |               |             |          |             |           |              |
| 6       | 1     |            |          |               |             |          |             |           |              |
| 7       | 1     |            |          |               |             |          |             |           |              |
| 8       | 1     |            |          |               |             |          |             |           |              |
| 9       | 1     |            |          |               |             |          |             |           |              |
| 10      | 1     |            |          |               |             |          |             |           |              |
| 11      | 1     |            |          |               |             |          |             |           |              |
| 12      | 1     |            |          |               |             |          |             |           |              |
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 1     |            |          |               |             |          |             |           |              |
| 3       | 1     |            |          |               |             |          |             |           |              |
| 4       | 1     |            |          |               |             |          |             |           |              |
| 5       | 1     |            |          |               |             |          |             |           |              |
| 6       | 1     |            |          |               |             |          |             |           |              |
| 7       | 1     |            |          |               |             |          |             |           |              |
| 8       | 1     |            |          |               |             |          |             |           |              |
| 9       | 1     |            |          |               |             |          |             |           |              |
| 10      | 1     |            |          |               |             |          |             |           |              |
| 11      | 1     |            |          |               |             |          |             |           |              |
| 12      | 1     |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             |           |              |

| H.      | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 1     |            |          |               |             |          |             |           |              |
| 3       | 1     |            |          |               |             |          |             |           |              |
| 4       | 1     |            |          |               |             |          |             |           |              |
| 5       | 1     |            |          |               |             |          |             |           |              |
| 6       | 1     |            |          |               |             |          |             |           |              |
| 7       | 1     |            |          |               |             |          |             |           |              |
| 8       | 1     |            |          |               |             |          |             |           |              |
| 9       | 1     |            |          |               |             |          |             |           |              |
| 10      | 1     |            |          |               |             |          |             |           |              |
| 11      | 1     |            |          |               |             |          |             |           |              |
| 12      | 1     |            |          |               |             |          |             |           |              |
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 1     |            |          |               |             |          |             |           |              |
| 3       | 1     |            |          |               |             |          |             |           |              |
| 4       | 1     |            |          |               |             |          |             |           |              |
| 5       | 1     |            |          |               |             |          |             |           |              |
| 6       | 1     |            |          |               |             |          |             |           |              |
| 7       | 1     |            |          |               |             |          |             |           |              |
| 8       | 1     |            |          |               |             |          |             |           |              |
| 9       | 1     |            |          |               |             |          |             |           |              |
| 10      | 1     |            |          |               |             |          |             |           |              |
| 11      | 1     |            |          |               |             |          |             |           |              |
| 12      | 1     |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             |           |              |



| <div> <div> from </div> <div> towards </div> </div> |    |       |          |        |      |                                      |       |              |             |        |             |
|---|----|-------|----------|--------|------|--------------------------------------|-------|--------------|-------------|--------|-------------|
| H.  | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                             |       |              |             |        |             |
| 1   | /  |       | 1st      | SE     |      | Under way with five buoys from       |       |              |             |        |             |
| 2   | /  |       |          |        |      | the light house and within 100 miles |       |              |             |        |             |
| 3   | /  |       |          |        |      | at the light house -                 |       |              |             |        |             |
| 4   | /  |       |          |        |      | 6 miles out of the light -           |       |              |             |        |             |
| 5   | /  |       |          |        |      | 10 miles out -                       |       |              |             |        |             |
| 6   | /  |       |          |        |      | 15 miles out -                       |       |              |             |        |             |
| 7   | /  |       |          |        |      | 20 miles out -                       |       |              |             |        |             |
| 8   | /  |       |          |        |      | 25 miles out -                       |       |              |             |        |             |
| 9   | /  |       |          |        |      | 30 miles out -                       |       |              |             |        |             |
| 10  | /  |       |          |        |      | 35 miles out -                       |       |              |             |        |             |
| 11  | /  |       |          |        |      | 40 miles out -                       |       |              |             |        |             |
| 12  | /  |       |          |        |      | 45 miles out -                       |       |              |             |        |             |
| 1   | /  |       |          |        |      | 50 miles out -                       |       |              |             |        |             |
| 2   | /  |       |          |        |      | 55 miles out -                       |       |              |             |        |             |
| 3   | /  |       |          |        |      | 60 miles out -                       |       |              |             |        |             |
| 4   | /  |       |          |        |      | 65 miles out -                       |       |              |             |        |             |
| 5   | /  |       |          |        |      | 70 miles out -                       |       |              |             |        |             |
| 6   | /  |       |          |        |      | 75 miles out -                       |       |              |             |        |             |
| 7   | /  |       |          |        |      | 80 miles out -                       |       |              |             |        |             |
| 8   | /  |       |          |        |      | 85 miles out -                       |       |              |             |        |             |
| 9   | /  |       |          |        |      | 90 miles out -                       |       |              |             |        |             |
| 10  | /  |       |          |        |      | 95 miles out -                       |       |              |             |        |             |
| 11  | /  |       |          |        |      | 100 miles out -                      |       |              |             |        |             |
| 12  | /  |       |          |        |      | 105 miles out -                      |       |              |             |        |             |
|   |    |       |          |        |      |                                      | Dist. | Lat. by D.R. | Lat. by Ob. | Varia. | Dist. Long. |
|   |    |       |          |        |      |                                      | 100   | 41           | 41          | 100    | 100         |
|   |    |       |          |        |      |                                      |       |              |             |        |             |
| H.  | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                             |       |              |             |        |             |
| 1   | /  |       | 1st      | SE     |      | Under way with five buoys from       |       |              |             |        |             |
| 2   | /  |       |          |        |      | the light house and within 100 miles |       |              |             |        |             |
| 3   | /  |       |          |        |      | at the light house -                 |       |              |             |        |             |
| 4   | /  |       |          |        |      | 6 miles out of the light -           |       |              |             |        |             |
| 5   | /  |       |          |        |      | 10 miles out -                       |       |              |             |        |             |
| 6   | /  |       |          |        |      | 15 miles out -                       |       |              |             |        |             |
| 7   | /  |       |          |        |      | 20 miles out -                       |       |              |             |        |             |
| 8   | /  |       |          |        |      | 25 miles out -                       |       |              |             |        |             |
| 9   | /  |       |          |        |      | 30 miles out -                       |       |              |             |        |             |
| 10  | /  |       |          |        |      | 35 miles out -                       |       |              |             |        |             |
| 11  | /  |       |          |        |      | 40 miles out -                       |       |              |             |        |             |
| 12  | /  |       |          |        |      | 45 miles out -                       |       |              |             |        |             |
| 1   | /  |       |          |        |      | 50 miles out -                       |       |              |             |        |             |
| 2   | /  |       |          |        |      | 55 miles out -                       |       |              |             |        |             |
| 3   | /  |       |          |        |      | 60 miles out -                       |       |              |             |        |             |
| 4   | /  |       |          |        |      | 65 miles out -                       |       |              |             |        |             |
| 5   | /  |       |          |        |      | 70 miles out -                       |       |              |             |        |             |
| 6   | /  |       |          |        |      | 75 miles out -                       |       |              |             |        |             |
| 7   | /  |       |          |        |      | 80 miles out -                       |       |              |             |        |             |
| 8   | /  |       |          |        |      | 85 miles out -                       |       |              |             |        |             |
| 9   | /  |       |          |        |      | 90 miles out -                       |       |              |             |        |             |
| 10  | /  |       |          |        |      | 95 miles out -                       |       |              |             |        |             |
| 11  | /  |       |          |        |      | 100 miles out -                      |       |              |             |        |             |
| 12  | /  |       |          |        |      | 105 miles out -                      |       |              |             |        |             |
|   |    |       |          |        |      |                                      | Dist. | Lat. by D.R. | Lat. by Ob. | Varia. | Dist. Long. |
|   |    |       |          |        |      |                                      | 100   | 41           | 41          | 100    | 100         |
|   |    |       |          |        |      |                                      |       |              |             |        |             |
|   |    |       |          |        |      |                                      | Dist. | Lat. by D.R. | Lat. by Ob. | Varia. | Dist. Long. |
|   |    |       |          |        |      |                                      | 100   | 41           | 41          | 100    | 100         |



|         |    |      | from     |            |      |                                     | towards     |        |             |           |              |
|---------|----|------|----------|------------|------|-------------------------------------|-------------|--------|-------------|-----------|--------------|
| H.      | K. | ILK. | Courses. | Winds.     | Lec. | Remarks.                            |             |        |             |           |              |
| 1       | /  |      | NE       | SE         |      | Commenced with fine breeze from the |             |        |             |           |              |
| 2       | 7  |      |          |            |      | Eastward & blew out rather          |             |        |             |           |              |
| 3       | 7  |      |          |            |      | employed in sparring the wind then  |             |        |             |           |              |
| 4       | /  |      |          |            |      | the ship's duty                     |             |        |             |           |              |
| 5       | /  |      |          |            |      | Midnight - not steady the wind      |             |        |             |           |              |
| 6       | /  |      |          |            |      | blew                                |             |        |             |           |              |
| 7       | 7  |      |          |            |      | 6 AM - Set the anchor               |             |        |             |           |              |
| 8       | /  |      |          |            |      | at 10 AM - Set the anchor at 11 AM  |             |        |             |           |              |
| 9       | /  |      |          |            |      | at 12 PM - Set the anchor at 1 PM   |             |        |             |           |              |
| 10      | /  |      |          |            |      | at 2 PM - Set the anchor at 3 PM    |             |        |             |           |              |
| 11      | /  |      |          |            |      | at 4 PM - Set the anchor at 5 PM    |             |        |             |           |              |
| 12      | /  |      |          |            |      | at 6 PM - Set the anchor at 7 PM    |             |        |             |           |              |
| 1       | /  |      | NE       | SE         |      | Commenced with fine breeze from the |             |        |             |           |              |
| 2       | /  |      |          |            |      | Eastward & blew out rather          |             |        |             |           |              |
| 3       | /  |      |          |            |      | employed in sparring the wind then  |             |        |             |           |              |
| 4       | /  |      |          |            |      | the ship's duty                     |             |        |             |           |              |
| 5       | /  |      |          |            |      | Midnight - not steady the wind      |             |        |             |           |              |
| 6       | /  |      |          |            |      | blew                                |             |        |             |           |              |
| 7       | 7  |      |          |            |      | 6 AM - Set the anchor               |             |        |             |           |              |
| 8       | /  |      |          |            |      | at 10 AM - Set the anchor at 11 AM  |             |        |             |           |              |
| 9       | /  |      |          |            |      | at 12 PM - Set the anchor at 1 PM   |             |        |             |           |              |
| 10      | /  |      |          |            |      | at 2 PM - Set the anchor at 3 PM    |             |        |             |           |              |
| 11      | /  |      |          |            |      | at 4 PM - Set the anchor at 5 PM    |             |        |             |           |              |
| 12      | /  |      |          |            |      | at 6 PM - Set the anchor at 7 PM    |             |        |             |           |              |
| Course. |    |      | Dist.    | Diff. lat. | Dep. | Lat. by D. R.                       | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
| (42)    |    |      | 12       | 12         | 12   | 30° 10'                             | 32° 07'     | 10 1/2 | 2° 29'      | 25° 40'   |              |

| H.      | K. | ILK. | Courses. | Winds.     | Lec. | Remarks.                            |             |        |             |           |              |
|---------|----|------|----------|------------|------|-------------------------------------|-------------|--------|-------------|-----------|--------------|
| 1       | /  |      | NE       | SE         |      | Commenced with fine breeze from the |             |        |             |           |              |
| 2       | /  |      |          |            |      | Eastward & blew out rather          |             |        |             |           |              |
| 3       | /  |      |          |            |      | employed in sparring the wind then  |             |        |             |           |              |
| 4       | /  |      |          |            |      | the ship's duty                     |             |        |             |           |              |
| 5       | /  |      |          |            |      | Midnight - not steady the wind      |             |        |             |           |              |
| 6       | /  |      |          |            |      | blew                                |             |        |             |           |              |
| 7       | 7  |      |          |            |      | 6 AM - Set the anchor               |             |        |             |           |              |
| 8       | /  |      |          |            |      | at 10 AM - Set the anchor at 11 AM  |             |        |             |           |              |
| 9       | /  |      |          |            |      | at 12 PM - Set the anchor at 1 PM   |             |        |             |           |              |
| 10      | /  |      |          |            |      | at 2 PM - Set the anchor at 3 PM    |             |        |             |           |              |
| 11      | /  |      |          |            |      | at 4 PM - Set the anchor at 5 PM    |             |        |             |           |              |
| 12      | /  |      |          |            |      | at 6 PM - Set the anchor at 7 PM    |             |        |             |           |              |
| 1       | /  |      | NE       | SE         |      | Commenced with fine breeze from the |             |        |             |           |              |
| 2       | /  |      |          |            |      | Eastward & blew out rather          |             |        |             |           |              |
| 3       | /  |      |          |            |      | employed in sparring the wind then  |             |        |             |           |              |
| 4       | 6  |      |          |            |      | the ship's duty                     |             |        |             |           |              |
| 5       | /  |      |          |            |      | Midnight - not steady the wind      |             |        |             |           |              |
| 6       | /  |      |          |            |      | blew                                |             |        |             |           |              |
| 7       | 7  |      |          |            |      | 6 AM - Set the anchor               |             |        |             |           |              |
| 8       | /  |      |          |            |      | at 10 AM - Set the anchor at 11 AM  |             |        |             |           |              |
| 9       | /  |      |          |            |      | at 12 PM - Set the anchor at 1 PM   |             |        |             |           |              |
| 10      | /  |      |          |            |      | at 2 PM - Set the anchor at 3 PM    |             |        |             |           |              |
| 11      | /  |      |          |            |      | at 4 PM - Set the anchor at 5 PM    |             |        |             |           |              |
| 12      | /  |      |          |            |      | at 6 PM - Set the anchor at 7 PM    |             |        |             |           |              |
| Course. |    |      | Dist.    | Diff. lat. | Dep. | Lat. by D. R.                       | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
| 270     |    |      | 14       | 14         | 1, 0 | 32° 51'                             | 33° 11'     | 1/4    | 1° 38'      | 2° 19'    |              |



| from New York towards ... |    |       |          |            |      |               |                           |        |             |           |
|---------------------------|----|-------|----------|------------|------|---------------|---------------------------|--------|-------------|-----------|
| H.                        | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      | Total Long. 4 1/2 1/2 1/2 |        |             |           |
| 1                         |    |       |          |            |      |               |                           |        |             |           |
| 2                         |    |       |          |            |      |               |                           |        |             |           |
| 3                         |    |       |          |            |      |               |                           |        |             |           |
| 4                         |    |       |          |            |      |               |                           |        |             |           |
| 5                         |    |       |          |            |      |               |                           |        |             |           |
| 6                         |    |       |          |            |      |               |                           |        |             |           |
| 7                         |    |       |          |            |      |               |                           |        |             |           |
| 8                         |    |       |          |            |      |               |                           |        |             |           |
| 9                         |    |       |          |            |      |               |                           |        |             |           |
| 10                        |    |       |          |            |      |               |                           |        |             |           |
| 11                        |    |       |          |            |      |               |                           |        |             |           |
| 12                        |    |       |          |            |      |               |                           |        |             |           |
| 1                         |    |       |          |            |      |               |                           |        |             |           |
| 2                         |    |       |          |            |      |               |                           |        |             |           |
| 3                         |    |       |          |            |      |               |                           |        |             |           |
| 4                         |    |       |          |            |      |               |                           |        |             |           |
| 5                         |    |       |          |            |      |               |                           |        |             |           |
| 6                         |    |       |          |            |      |               |                           |        |             |           |
| 7                         |    |       |          |            |      |               |                           |        |             |           |
| 8                         |    |       |          |            |      |               |                           |        |             |           |
| 9                         |    |       |          |            |      |               |                           |        |             |           |
| 10                        |    |       |          |            |      |               |                           |        |             |           |
| 11                        |    |       |          |            |      |               |                           |        |             |           |
| 12                        |    |       |          |            |      |               |                           |        |             |           |
| Course.                   |    |       | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.               | Varia. | Diff. Long. | Long. in. |
|                           |    |       | 47       | 5          | 102  | 30 2 1/2      | 30 2 1/2                  | 1/2    | 5 1/2       | 2         |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      | Total Long. 4 1/2 1/2 1/2 |        |             |           |
|---------|----|-------|----------|------------|------|---------------|---------------------------|--------|-------------|-----------|
| 1       |    |       |          |            |      |               |                           |        |             |           |
| 2       |    |       |          |            |      |               |                           |        |             |           |
| 3       |    |       |          |            |      |               |                           |        |             |           |
| 4       |    |       |          |            |      |               |                           |        |             |           |
| 5       |    |       |          |            |      |               |                           |        |             |           |
| 6       |    |       |          |            |      |               |                           |        |             |           |
| 7       |    |       |          |            |      |               |                           |        |             |           |
| 8       |    |       |          |            |      |               |                           |        |             |           |
| 9       |    |       |          |            |      |               |                           |        |             |           |
| 10      |    |       |          |            |      |               |                           |        |             |           |
| 11      |    |       |          |            |      |               |                           |        |             |           |
| 12      |    |       |          |            |      |               |                           |        |             |           |
| 1       |    |       |          |            |      |               |                           |        |             |           |
| 2       |    |       |          |            |      |               |                           |        |             |           |
| 3       |    |       |          |            |      |               |                           |        |             |           |
| 4       |    |       |          |            |      |               |                           |        |             |           |
| 5       |    |       |          |            |      |               |                           |        |             |           |
| 6       |    |       |          |            |      |               |                           |        |             |           |
| 7       |    |       |          |            |      |               |                           |        |             |           |
| 8       |    |       |          |            |      |               |                           |        |             |           |
| 9       |    |       |          |            |      |               |                           |        |             |           |
| 10      |    |       |          |            |      |               |                           |        |             |           |
| 11      |    |       |          |            |      |               |                           |        |             |           |
| 12      |    |       |          |            |      |               |                           |        |             |           |
| 1       |    |       |          |            |      |               |                           |        |             |           |
| 2       |    |       |          |            |      |               |                           |        |             |           |
| 3       |    |       |          |            |      |               |                           |        |             |           |
| 4       |    |       |          |            |      |               |                           |        |             |           |
| 5       |    |       |          |            |      |               |                           |        |             |           |
| 6       |    |       |          |            |      |               |                           |        |             |           |
| 7       |    |       |          |            |      |               |                           |        |             |           |
| 8       |    |       |          |            |      |               |                           |        |             |           |
| 9       |    |       |          |            |      |               |                           |        |             |           |
| 10      |    |       |          |            |      |               |                           |        |             |           |
| 11      |    |       |          |            |      |               |                           |        |             |           |
| 12      |    |       |          |            |      |               |                           |        |             |           |
| Course. |    |       | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.               | Varia. | Diff. Long. | Long. in. |
| 97 1/2  |    |       | 5        | 50         | 0    | 30 2 1/2      | 30 2 1/2                  | 1/2    | 5 1/2       | 2         |



| from    |       |            |          |               |             | towards  |             |           |              |  |  |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|--|
| H.      | K.    | H.K.       | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |  |  |
| 1       |       |            |          |               |             |          |             |           |              |  |  |
| 2       |       |            |          |               |             |          |             |           |              |  |  |
| 3       |       |            |          |               |             |          |             |           |              |  |  |
| 4       |       |            |          |               |             |          |             |           |              |  |  |
| 5       |       |            |          |               |             |          |             |           |              |  |  |
| 6       |       |            |          |               |             |          |             |           |              |  |  |
| 7       |       |            |          |               |             |          |             |           |              |  |  |
| 8       |       |            |          |               |             |          |             |           |              |  |  |
| 9       |       |            |          |               |             |          |             |           |              |  |  |
| 10      |       |            |          |               |             |          |             |           |              |  |  |
| 11      |       |            |          |               |             |          |             |           |              |  |  |
| 12      |       |            |          |               |             |          |             |           |              |  |  |
| 1       |       |            |          |               |             |          |             |           |              |  |  |
| 2       |       |            |          |               |             |          |             |           |              |  |  |
| 3       |       |            |          |               |             |          |             |           |              |  |  |
| 4       |       |            |          |               |             |          |             |           |              |  |  |
| 5       |       |            |          |               |             |          |             |           |              |  |  |
| 6       |       |            |          |               |             |          |             |           |              |  |  |
| 7       |       |            |          |               |             |          |             |           |              |  |  |
| 8       |       |            |          |               |             |          |             |           |              |  |  |
| 9       |       |            |          |               |             |          |             |           |              |  |  |
| 10      |       |            |          |               |             |          |             |           |              |  |  |
| 11      |       |            |          |               |             |          |             |           |              |  |  |
| 12      |       |            |          |               |             |          |             |           |              |  |  |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |  |
|         |       |            |          |               |             |          |             |           |              |  |  |

| H.      | K.    | H.K.       | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |  |  |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|--|
| 1       |       |            |          |               |             |          |             |           |              |  |  |
| 2       |       |            |          |               |             |          |             |           |              |  |  |
| 3       |       |            |          |               |             |          |             |           |              |  |  |
| 4       |       |            |          |               |             |          |             |           |              |  |  |
| 5       |       |            |          |               |             |          |             |           |              |  |  |
| 6       |       |            |          |               |             |          |             |           |              |  |  |
| 7       |       |            |          |               |             |          |             |           |              |  |  |
| 8       |       |            |          |               |             |          |             |           |              |  |  |
| 9       |       |            |          |               |             |          |             |           |              |  |  |
| 10      |       |            |          |               |             |          |             |           |              |  |  |
| 11      |       |            |          |               |             |          |             |           |              |  |  |
| 12      |       |            |          |               |             |          |             |           |              |  |  |
| 1       |       |            |          |               |             |          |             |           |              |  |  |
| 2       |       |            |          |               |             |          |             |           |              |  |  |
| 3       |       |            |          |               |             |          |             |           |              |  |  |
| 4       |       |            |          |               |             |          |             |           |              |  |  |
| 5       |       |            |          |               |             |          |             |           |              |  |  |
| 6       |       |            |          |               |             |          |             |           |              |  |  |
| 7       |       |            |          |               |             |          |             |           |              |  |  |
| 8       |       |            |          |               |             |          |             |           |              |  |  |
| 9       |       |            |          |               |             |          |             |           |              |  |  |
| 10      |       |            |          |               |             |          |             |           |              |  |  |
| 11      |       |            |          |               |             |          |             |           |              |  |  |
| 12      |       |            |          |               |             |          |             |           |              |  |  |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |  |
| 118     |       |            | 66       | 34°42'        | 35°21'      | 1°11'    | 3°13'       | 6°01'     |              |  |  |



| from . . . . . towards . . . . . |    |       |          |            |      |               |             |        |             |                        |
|----------------------------------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|------------------------|
| H.                               | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |                        |
| 1                                |    |       |          |            |      |               |             |        |             |                        |
| 2                                |    |       |          |            |      |               |             |        |             |                        |
| 3                                |    |       |          |            |      |               |             |        |             |                        |
| 4                                |    |       |          |            |      |               |             |        |             |                        |
| 5                                |    |       |          |            |      |               |             |        |             |                        |
| 6                                |    |       |          |            |      |               |             |        |             |                        |
| 7                                |    |       |          |            |      |               |             |        |             |                        |
| 8                                |    |       |          |            |      |               |             |        |             |                        |
| 9                                |    |       |          |            |      |               |             |        |             |                        |
| 10                               |    |       |          |            |      |               |             |        |             |                        |
| 11                               |    |       |          |            |      |               |             |        |             |                        |
| 12                               |    |       |          |            |      |               |             |        |             |                        |
| 1                                |    |       |          |            |      |               |             |        |             |                        |
| 2                                |    |       |          |            |      |               |             |        |             |                        |
| 3                                |    |       |          |            |      |               |             |        |             |                        |
| 4                                |    |       |          |            |      |               |             |        |             |                        |
| 5                                |    |       |          |            |      |               |             |        |             |                        |
| 6                                |    |       |          |            |      |               |             |        |             |                        |
| 7                                |    |       |          |            |      |               |             |        |             |                        |
| 8                                |    |       |          |            |      |               |             |        |             |                        |
| 9                                |    |       |          |            |      |               |             |        |             |                        |
| 10                               |    |       |          |            |      |               |             |        |             |                        |
| 11                               |    |       |          |            |      |               |             |        |             |                        |
| 12                               |    |       |          |            |      |               |             |        |             |                        |
| Course.                          |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. Long. by Ob. |
|                                  |    |       |          |            |      |               |             |        |             |                        |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |                        |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|------------------------|
| 1       |    |       |          |            |      |               |             |        |             |                        |
| 2       |    |       |          |            |      |               |             |        |             |                        |
| 3       |    |       |          |            |      |               |             |        |             |                        |
| 4       |    |       |          |            |      |               |             |        |             |                        |
| 5       |    |       |          |            |      |               |             |        |             |                        |
| 6       |    |       |          |            |      |               |             |        |             |                        |
| 7       |    |       |          |            |      |               |             |        |             |                        |
| 8       |    |       |          |            |      |               |             |        |             |                        |
| 9       |    |       |          |            |      |               |             |        |             |                        |
| 10      |    |       |          |            |      |               |             |        |             |                        |
| 11      |    |       |          |            |      |               |             |        |             |                        |
| 12      |    |       |          |            |      |               |             |        |             |                        |
| 1       |    |       |          |            |      |               |             |        |             |                        |
| 2       |    |       |          |            |      |               |             |        |             |                        |
| 3       |    |       |          |            |      |               |             |        |             |                        |
| 4       |    |       |          |            |      |               |             |        |             |                        |
| 5       |    |       |          |            |      |               |             |        |             |                        |
| 6       |    |       |          |            |      |               |             |        |             |                        |
| 7       |    |       |          |            |      |               |             |        |             |                        |
| 8       |    |       |          |            |      |               |             |        |             |                        |
| 9       |    |       |          |            |      |               |             |        |             |                        |
| 10      |    |       |          |            |      |               |             |        |             |                        |
| 11      |    |       |          |            |      |               |             |        |             |                        |
| 12      |    |       |          |            |      |               |             |        |             |                        |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. Long. by Ob. |
|         |    |       |          |            |      |               |             |        |             |                        |



Manufactured and sold by JOHN P. JEWETT, 193 Essex Street, Salem, Mass.



| from    |    | towards |            |        |               |             |        |             |           |              |
|---------|----|---------|------------|--------|---------------|-------------|--------|-------------|-----------|--------------|
| H.      | K. | H. K.   | Courses.   | Winds. | Lee.          | Remarks.    |        |             |           |              |
| 1       | 1  |         |            |        |               |             |        |             |           |              |
| 2       | 1  |         |            |        |               |             |        |             |           |              |
| 3       | 1  |         |            |        |               |             |        |             |           |              |
| 4       | 1  |         |            |        |               |             |        |             |           |              |
| 5       | 1  |         |            |        |               |             |        |             |           |              |
| 6       | 1  |         |            |        |               |             |        |             |           |              |
| 7       | 4  |         |            |        |               |             |        |             |           |              |
| 8       | 4  |         |            |        |               |             |        |             |           |              |
| 9       | 1  |         |            |        |               |             |        |             |           |              |
| 10      | 1  |         |            |        |               |             |        |             |           |              |
| 11      | 1  |         |            |        |               |             |        |             |           |              |
| 12      | 1  |         |            |        |               |             |        |             |           |              |
| 1       | 1  |         |            |        |               |             |        |             |           |              |
| 2       | 1  |         |            |        |               |             |        |             |           |              |
| 3       | 1  |         |            |        |               |             |        |             |           |              |
| 4       | 1  |         |            |        |               |             |        |             |           |              |
| 5       | 6  |         |            |        |               |             |        |             |           |              |
| 6       | 1  |         |            |        |               |             |        |             |           |              |
| 7       | 6  |         |            |        |               |             |        |             |           |              |
| 8       | 6  |         |            |        |               |             |        |             |           |              |
| 9       | 1  |         |            |        |               |             |        |             |           |              |
| 10      | 1  |         |            |        |               |             |        |             |           |              |
| 11      | 7  |         |            |        |               |             |        |             |           |              |
| 12      | 1  |         |            |        |               |             |        |             |           |              |
| Course. |    | Dist.   | Diff. lat. | Dep.   | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
| 7.25    |    | 2.1     | 3.5        | 2.5    | 5.1           | 5.1         | 24°    | 237'        | 107'      | 1.3          |

| H.      | K. | H. K. | Courses.   | Winds. | Lee.          | Remarks.    |        |             |           |              |
|---------|----|-------|------------|--------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       | 6  | 1     |            |        |               |             |        |             |           |              |
| 2       | 6  | 1     |            |        |               |             |        |             |           |              |
| 3       | 6  | 1     |            |        |               |             |        |             |           |              |
| 4       | 1  |       |            |        |               |             |        |             |           |              |
| 5       | 1  |       |            |        |               |             |        |             |           |              |
| 6       | 1  |       |            |        |               |             |        |             |           |              |
| 7       | 1  |       |            |        |               |             |        |             |           |              |
| 8       | 1  |       |            |        |               |             |        |             |           |              |
| 9       | 1  |       |            |        |               |             |        |             |           |              |
| 10      | 1  |       |            |        |               |             |        |             |           |              |
| 11      | 1  |       |            |        |               |             |        |             |           |              |
| 12      | 1  |       |            |        |               |             |        |             |           |              |
| 1       | 1  |       |            |        |               |             |        |             |           |              |
| 2       | 1  |       |            |        |               |             |        |             |           |              |
| 3       | 1  |       |            |        |               |             |        |             |           |              |
| 4       | 1  |       |            |        |               |             |        |             |           |              |
| 5       | 1  |       |            |        |               |             |        |             |           |              |
| 6       | 1  |       |            |        |               |             |        |             |           |              |
| 7       | 1  |       |            |        |               |             |        |             |           |              |
| 8       | 1  |       |            |        |               |             |        |             |           |              |
| 9       | 1  |       |            |        |               |             |        |             |           |              |
| 10      | 1  |       |            |        |               |             |        |             |           |              |
| 11      | 1  |       |            |        |               |             |        |             |           |              |
| 12      | 1  |       |            |        |               |             |        |             |           |              |
| Course. |    | Dist. | Diff. lat. | Dep.   | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
| 9768    |    | 9     | 50         | 2.5    | 5.29          | 5.1         | 24°    | 239'        | 107'      |              |



Manufactured and sold by JOHN P. JEWETT, 193 Essex Street, Salem, Mass.



*towards*

| Chart. | Dist. | Diff. lat. | Dep. | Lat. by D.R. | Lat. by Ob.  | Varia. | Diff. Long. | Long. in. | Long by Ob. |
|--------|-------|------------|------|--------------|--------------|--------|-------------|-----------|-------------|
| 12     |       |            |      |              | 39° 00' East | 12     |             | 100, 8    |             |



from

towards

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 6  |      |          |        |      |          |
| 2  | 6  |      |          |        |      |          |
| 3  | 6  |      |          |        |      |          |
| 4  | 6  |      |          |        |      |          |
| 5  | 6  | 1    |          |        |      |          |
| 6  | 6  | 1    |          |        |      |          |
| 7  | 6  | 1    |          |        |      |          |
| 8  | 6  | 1    |          |        |      |          |
| 9  | 6  | 1    |          |        |      |          |
| 10 | 6  | 1    |          |        |      |          |
| 11 | 6  | 1    |          |        |      |          |
| 12 | 6  | 1    |          |        |      |          |
| 1  | 6  |      |          |        |      |          |
| 2  | 6  |      |          |        |      |          |
| 3  | 6  |      |          |        |      |          |
| 4  | 6  |      |          |        |      |          |
| 5  | 6  |      |          |        |      |          |
| 6  | 6  | 1    |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       | 1     | 1          | 1    | 1             | 1           | 1      | 1           | 1         | 1            |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       | 1     | 1          | 1    | 1             | 1           | 1      | 1           | 1         | 1            |



| from    |       | towards    |          |               |             |          |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             |           |              |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             |           |              |



from *the ...* towards *the ...*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.           |
|----|----|------|----------|--------|------|--------------------|
| 1  |    |      |          |        |      | ... with light ... |
| 2  |    |      |          |        |      | ... weather ...    |
| 3  |    |      |          |        |      | ... about ...      |
| 4  |    |      |          |        |      | ... the ...        |
| 5  |    |      |          |        |      | ... at ...         |
| 6  |    |      |          |        |      | ... the ...        |
| 7  |    |      |          |        |      | ... at ...         |
| 8  |    |      |          |        |      | ... the ...        |
| 9  |    |      |          |        |      | ... the ...        |
| 10 |    |      |          |        |      | ... the ...        |
| 11 |    |      |          |        |      | ... the ...        |
| 12 |    |      |          |        |      | ... the ...        |
| 1  |    |      |          |        |      | ... the ...        |
| 2  |    |      |          |        |      | ... the ...        |
| 3  |    |      |          |        |      | ... the ...        |
| 4  |    |      |          |        |      | ... the ...        |
| 5  |    |      |          |        |      | ... the ...        |
| 6  |    |      |          |        |      | ... the ...        |
| 7  |    |      |          |        |      | ... the ...        |
| 8  |    |      |          |        |      | ... the ...        |
| 9  |    |      |          |        |      | ... the ...        |
| 10 |    |      |          |        |      | ... the ...        |
| 11 |    |      |          |        |      | ... the ...        |
| 12 |    |      |          |        |      | ... the ...        |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      | 11 4'         | 11 4'       |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.     |
|----|----|------|----------|--------|------|--------------|
| 1  |    |      |          |        |      | ... with ... |
| 2  |    |      |          |        |      | ... the ...  |
| 3  |    |      |          |        |      | ... the ...  |
| 4  |    |      |          |        |      | ... the ...  |
| 5  |    |      |          |        |      | ... the ...  |
| 6  |    |      |          |        |      | ... the ...  |
| 7  |    |      |          |        |      | ... the ...  |
| 8  |    |      |          |        |      | ... the ...  |
| 9  |    |      |          |        |      | ... the ...  |
| 10 |    |      |          |        |      | ... the ...  |
| 11 |    |      |          |        |      | ... the ...  |
| 12 |    |      |          |        |      | ... the ...  |
| 1  |    |      |          |        |      | ... the ...  |
| 2  |    |      |          |        |      | ... the ...  |
| 3  |    |      |          |        |      | ... the ...  |
| 4  |    |      |          |        |      | ... the ...  |
| 5  |    |      |          |        |      | ... the ...  |
| 6  |    |      |          |        |      | ... the ...  |
| 7  |    |      |          |        |      | ... the ...  |
| 8  |    |      |          |        |      | ... the ...  |
| 9  |    |      |          |        |      | ... the ...  |
| 10 |    |      |          |        |      | ... the ...  |
| 11 |    |      |          |        |      | ... the ...  |
| 12 |    |      |          |        |      | ... the ...  |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 116     | 21    | 22         | 25   | 41 55'        | 41 55'      | 2 1/2' | 5 1'        | 41 55'    | 41 55'       |



|         |    | from  |          | towards    |      |               |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    | /     |          |            |      |               |             |        |             |           |              |
| 11      |    | /     |          |            |      |               |             |        |             |           |              |
| 12      |    | /     |          |            |      |               |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       | 6  |       |          |            |      |               |             |        |             |           |              |
| 5       | 6  |       |          |            |      |               |             |        |             |           |              |
| 6       | 6  |       |          |            |      |               |             |        |             |           |              |
| 7       | 6  |       |          |            |      |               |             |        |             |           |              |
| 8       | 6  |       |          |            |      |               |             |        |             |           |              |
| 9       | 6  |       |          |            |      |               |             |        |             |           |              |
| 10      | 6  |       |          |            |      |               |             |        |             |           |              |
| 11      | 6  |       |          |            |      |               |             |        |             |           |              |
| 12      | 6  |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               |             |        |             |           |              |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| 1       |    | /     |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
| 1, 6 E  |    |       | 1, 1     | 2, 5       | 1    | 2, 1, 6       | 4, 1, 6     | 1, 1   | 2, 1, 6     | 2, 1, 6   | 2, 1, 6      |



from                      towards

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                    |
|----|----|------|----------|--------|------|-----------------------------|
| 1  | 1  |      |          |        |      | Commenced to rain in p.m.   |
| 2  | 1  |      |          |        |      |                             |
| 3  | 7  |      |          |        |      | in weather -                |
| 4  | 6  |      |          |        |      |                             |
| 5  | 6  |      |          |        |      | at night - light breeze -   |
| 6  | 6  |      |          |        |      | passing by -                |
| 7  | 6  |      |          |        |      |                             |
| 8  | 6  |      |          |        |      |                             |
| 9  | 7  |      |          |        |      |                             |
| 10 | 7  |      |          |        |      | beginning to rain in p.m.   |
| 11 | 6  | 1    |          |        |      | weather -                   |
| 12 | 6  |      |          |        |      |                             |
| 1  | 1  |      |          |        |      |                             |
| 2  | 1  |      |          |        |      |                             |
| 3  | 6  |      |          |        |      | Entered with water in sea - |
| 4  | 6  |      |          |        |      | to weather -                |
| 5  | 1  |      |          |        |      |                             |
| 6  | 1  |      |          |        |      |                             |
| 7  | 1  |      |          |        |      |                             |
| 8  | 4  |      |          |        |      |                             |
| 9  | 4  |      |          |        |      |                             |
| 10 | 4  |      |          |        |      |                             |
| 11 | 4  |      |          |        |      |                             |
| 12 | 4  |      |          |        |      |                             |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| 175     | 11    | 11         | 11   | 40° 45'       | 41° 15'     | 10° 15' | 10° 15'     | 150° 00'  | 150° 00'     |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                  |
|----|----|------|----------|--------|------|---------------------------|
| 1  | 1  |      |          |        |      | Commenced to rain in p.m. |
| 2  | 1  |      |          |        |      |                           |
| 3  | 1  |      |          |        |      | in weather -              |
| 4  | 1  |      |          |        |      |                           |
| 5  | 1  |      |          |        |      | at night - light breeze - |
| 6  | 1  |      |          |        |      | passing by -              |
| 7  | 1  |      |          |        |      |                           |
| 8  | 1  |      |          |        |      |                           |
| 9  | 1  |      |          |        |      |                           |
| 10 | 1  |      |          |        |      | Commenced to rain in p.m. |
| 11 | 1  |      |          |        |      | weather -                 |
| 12 | 1  |      |          |        |      |                           |
| 1  | 1  |      |          |        |      |                           |
| 2  | 1  |      |          |        |      |                           |
| 3  | 1  |      |          |        |      | at night - light breeze - |
| 4  | 1  |      |          |        |      | passing by -              |
| 5  | 1  |      |          |        |      |                           |
| 6  | 1  |      |          |        |      |                           |
| 7  | 1  |      |          |        |      |                           |
| 8  | 1  |      |          |        |      |                           |
| 9  | 1  |      |          |        |      |                           |
| 10 | 1  |      |          |        |      | Commenced to rain in p.m. |
| 11 | 1  |      |          |        |      | weather -                 |
| 12 | 1  |      |          |        |      |                           |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| 175     | 6     | 11         | 11   | 39° 15'       | 39° 45'     | 10° 15' | 10° 15'     | 150° 00'  | 150° 00'     |



| from    |       |            |          | towards       |             |          |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             |           |              |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             | 62°48'E   |              |



from *the harbor* towards *the sea*

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks.                         |
|----|----|------|----------|--------|------|----------------------------------|
| 1  | 6  |      |          |        |      | Commenced with light breeze from |
| 2  | 6  |      |          |        |      | the north                        |
| 3  | 6  |      |          |        |      | the north                        |
| 4  | 6  |      |          |        |      | the north                        |
| 5  | 6  |      |          |        |      | the north                        |
| 6  | 6  |      |          |        |      | the north                        |
| 7  | 6  |      |          |        |      | the north                        |
| 8  | 6  |      |          |        |      | the north                        |
| 9  | 7  | 1    |          |        |      | the north                        |
| 10 | 7  | 1    |          |        |      | the north                        |
| 11 | 7  | 1    |          |        |      | the north                        |
| 12 | 7  | 1    |          |        |      | the north                        |
| 1  | 7  | 1    |          |        |      | the north                        |
| 2  | 7  | 1    |          |        |      | the north                        |
| 3  | 7  | 1    |          |        |      | the north                        |
| 4  | 7  | 1    |          |        |      | the north                        |
| 5  | 7  | 1    |          |        |      | the north                        |
| 6  | 7  | 1    |          |        |      | the north                        |
| 7  | 7  | 1    |          |        |      | the north                        |
| 8  | 7  | 1    |          |        |      | the north                        |
| 9  | 7  | 1    |          |        |      | the north                        |
| 10 | 7  | 1    |          |        |      | the north                        |
| 11 | 7  | 1    |          |        |      | the north                        |
| 12 | 7  | 1    |          |        |      | the north                        |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| 172°    | 10    | 1          | 111  | 35° 21' N     | 35° 15' N   | 2 ps 11 | 2° 21' E    | 10° 19' E |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks.                         |
|----|----|------|----------|--------|------|----------------------------------|
| 1  | 6  |      |          |        |      | Commenced with light breeze from |
| 2  | 6  |      |          |        |      | the north                        |
| 3  | 6  |      |          |        |      | the north                        |
| 4  | 6  |      |          |        |      | the north                        |
| 5  | 6  |      |          |        |      | the north                        |
| 6  | 6  |      |          |        |      | the north                        |
| 7  | 6  |      |          |        |      | the north                        |
| 8  | 6  |      |          |        |      | the north                        |
| 9  | 6  |      |          |        |      | the north                        |
| 10 | 6  |      |          |        |      | the north                        |
| 11 | 6  |      |          |        |      | the north                        |
| 12 | 6  |      |          |        |      | the north                        |
| 1  | 6  |      |          |        |      | the north                        |
| 2  | 6  |      |          |        |      | the north                        |
| 3  | 6  |      |          |        |      | the north                        |
| 4  | 6  |      |          |        |      | the north                        |
| 5  | 6  |      |          |        |      | the north                        |
| 6  | 6  |      |          |        |      | the north                        |
| 7  | 6  |      |          |        |      | the north                        |
| 8  | 6  |      |          |        |      | the north                        |
| 9  | 6  |      |          |        |      | the north                        |
| 10 | 6  |      |          |        |      | the north                        |
| 11 | 6  |      |          |        |      | the north                        |
| 12 | 6  |      |          |        |      | the north                        |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| 172°    | 10    | 1          | 111  | 35° 21' N     | 35° 15' N   | 2 ps 11 | 2° 21' E    | 10° 19' E |              |



| from <i>London</i> towards <i>London</i> |       |            |          |               |             |          |             |           |              |  |
|--|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|
| H.                                       | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |  |
| 1  |       |            |          |               |             |          |             |           |              |  |
| 2  |       |            |          |               |             |          |             |           |              |  |
| 3  |       |            |          |               |             |          |             |           |              |  |
| 4  |       |            |          |               |             |          |             |           |              |  |
| 5  |       |            |          |               |             |          |             |           |              |  |
| 6  |       |            |          |               |             |          |             |           |              |  |
| 7  | 1     | 1          |          |               |             |          |             |           |              |  |
| 8  | 1     |            |          |               |             |          |             |           |              |  |
| 9  | 1     |            |          |               |             |          |             |           |              |  |
| 10                                       | 1     |            |          |               |             |          |             |           |              |  |
| 11                                       | 1     |            |          |               |             |          |             |           |              |  |
| 12                                       | 1     |            |          |               |             |          |             |           |              |  |
| 1  |       |            |          |               |             |          |             |           |              |  |
| 2  |       |            |          |               |             |          |             |           |              |  |
| 3  |       |            |          |               |             |          |             |           |              |  |
| 4  |       |            |          |               |             |          |             |           |              |  |
| 5  | 1     |            |          |               |             |          |             |           |              |  |
| 6  | 1     |            |          |               |             |          |             |           |              |  |
| 7  | 1     |            |          |               |             |          |             |           |              |  |
| 8  | 1     |            |          |               |             |          |             |           |              |  |
| 9  | 1     |            |          |               |             |          |             |           |              |  |
| 10                                       | 1     |            |          |               |             |          |             |           |              |  |
| 11                                       | 1     |            |          |               |             |          |             |           |              |  |
| 12                                       | 1     |            |          |               |             |          |             |           |              |  |
| Course.                                  | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |
| 1  | 100   | 1          | 1        | 1             | 1           | 1        | 1           | 1         | 1            |  |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |  |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|
| 1       |       |            |          |               |             |          |             |           |              |  |
| 2       |       |            |          |               |             |          |             |           |              |  |
| 3       |       |            |          |               |             |          |             |           |              |  |
| 4       |       |            |          |               |             |          |             |           |              |  |
| 5       |       |            |          |               |             |          |             |           |              |  |
| 6       |       |            |          |               |             |          |             |           |              |  |
| 7       |       |            |          |               |             |          |             |           |              |  |
| 8       | 1     |            |          |               |             |          |             |           |              |  |
| 9       | 1     |            |          |               |             |          |             |           |              |  |
| 10      | 1     |            |          |               |             |          |             |           |              |  |
| 11      | 1     |            |          |               |             |          |             |           |              |  |
| 12      | 1     |            |          |               |             |          |             |           |              |  |
| 1       |       |            |          |               |             |          |             |           |              |  |
| 2       |       |            |          |               |             |          |             |           |              |  |
| 3       |       |            |          |               |             |          |             |           |              |  |
| 4       |       |            |          |               |             |          |             |           |              |  |
| 5       |       |            |          |               |             |          |             |           |              |  |
| 6       |       |            |          |               |             |          |             |           |              |  |
| 7       |       |            |          |               |             |          |             |           |              |  |
| 8       |       |            |          |               |             |          |             |           |              |  |
| 9       |       |            |          |               |             |          |             |           |              |  |
| 10      |       |            |          |               |             |          |             |           |              |  |
| 11      |       |            |          |               |             |          |             |           |              |  |
| 12      |       |            |          |               |             |          |             |           |              |  |
| Course. | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |
| 1       | 15    |            | 1        | 1             | 1           | 1        | 1           | 1         | 1            |  |



from *Lee Point* towards *Point*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       | 9          |      | 47° 1'        |             | 1 1/2  | 25'         | 111° 11'  |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       | 4          |      | 51° 17'       | 51° 55'     | 1 1/2  | 51'         | 90° 11'   | 11° 5'       |



from.

towards.

| H.      | K.    | H. K.      | Courses. | Winds.        | Lce.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             |           |              |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lce.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               |             |          |             |           |              |



from *the* *South* towards *the* *North*

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 2  |      |          |        |      |          |
| 11 | 5  |      |          |        |      |          |
| 12 | 5  |      |          |        |      |          |
| 1  | 5  |      |          |        |      |          |
| 2  | 5  |      |          |        |      |          |
| 3  | 5  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Obs. | Var.   | Dist. by Comp. | Lat. by Lat. | Long. by Long. |
|---------|-------|------------|------|---------------|--------------|--------|----------------|--------------|----------------|
| 1       | 1     | 1          |      | 33° 44' N     | 33° 44' N    | 1 pt N | 1° 11'         | 33° 44'      | 127° 15'       |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Obs. | Var.   | Dist. by Comp. | Lat. by Lat. | Long. by Long. |
|---------|-------|------------|------|---------------|--------------|--------|----------------|--------------|----------------|
| 1       | 1     | 1          |      | 33° 44' N     | 34° 55' N    | 1 pt N | 2° 11'         | 33° 44'      | 99° 51'        |



from *London* towards *London*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 2  |       |          |        |      |          |
| 2  | 6  |       |          |        |      |          |
| 3  | 6  |       |          |        |      |          |
| 4  | 6  |       |          |        |      |          |
| 5  | 6  |       |          |        |      |          |
| 6  | 6  |       |          |        |      |          |
| 7  | 0  |       |          |        |      |          |
| 8  | 1  |       |          |        |      |          |
| 9  | 1  |       |          |        |      |          |
| 10 | 1  |       |          |        |      |          |
| 11 | 1  |       |          |        |      |          |
| 12 | 1  |       |          |        |      |          |
| 1  | 1  |       |          |        |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 1  |       |          |        |      |          |
| 4  | 7  |       |          |        |      |          |
| 5  | 7  |       |          |        |      |          |
| 6  | 7  |       |          |        |      |          |
| 7  | 7  |       |          |        |      |          |
| 8  | 7  |       |          |        |      |          |
| 9  | 7  |       |          |        |      |          |
| 10 | 7  |       |          |        |      |          |
| 11 | 7  |       |          |        |      |          |
| 12 | 7  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



| from <i>from</i> towards <i>towards</i> |    |      |          |        |      |          |
|---|----|------|----------|--------|------|----------|
| H.                                      | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
| 1                                       |    |      |          |        |      |          |
| 2                                       |    |      |          |        |      |          |
| 3                                       |    |      |          |        |      |          |
| 4                                       |    |      |          |        |      |          |
| 5                                       |    |      |          |        |      |          |
| 6                                       |    |      |          |        |      |          |
| 7                                       |    |      |          |        |      |          |
| 8                                       |    |      |          |        |      |          |
| 9                                       |    |      |          |        |      |          |
| 10                                      |    |      |          |        |      |          |
| 11                                      | /  | /    |          |        |      |          |
| 12                                      | /  | /    |          |        |      |          |
| 1                                       |    |      |          |        |      |          |
| 2                                       |    |      |          |        |      |          |
| 3                                       |    |      |          |        |      |          |
| 4                                       |    |      |          |        |      |          |
| 5                                       |    |      |          |        |      |          |
| 6                                       |    |      |          |        |      |          |
| 7                                       |    |      |          |        |      |          |
| 8                                       |    |      |          |        |      |          |
| 9                                       |    |      |          |        |      |          |
| 10                                      |    |      |          |        |      |          |
| 11                                      |    |      |          |        |      |          |
| 12                                      |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 37      | 23    | 8          | 132  | 67            | 11          |        | 30          | 6 43      |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    | /    |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    | /    |          |        |      |          |
| 7  |    | /    |          |        |      |          |
| 8  | /  | /    |          |        |      |          |
| 9  | /  | /    |          |        |      |          |
| 10 | /  | /    |          |        |      |          |
| 11 | /  | /    |          |        |      |          |
| 12 | /  | /    |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    | /    |          |        |      |          |
| 4  |    | /    |          |        |      |          |
| 5  |    | /    |          |        |      |          |
| 6  |    | /    |          |        |      |          |
| 7  |    | /    |          |        |      |          |
| 8  |    | /    |          |        |      |          |
| 9  |    | /    |          |        |      |          |
| 10 | /  | /    |          |        |      |          |
| 11 | /  | /    |          |        |      |          |
| 12 | /  | /    |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| 127     | 113   | 170        | 126  | 23° 6'        | 23° 5'      | Part II | 2° 19'      | 119° 25'  |              |



| from <i>  </i> towards <i>  </i> |       |            |          |               |             |          |             |           |              |  |  |
|----------------------------------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|--|
| H.                               | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |  |  |
| 1                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 2                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 3                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 4                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 5                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 6                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 7                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 8                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 9                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 10                               | 7     |            |          |               |             |          |             |           |              |  |  |
| 11                               | 7     |            |          |               |             |          |             |           |              |  |  |
| 12                               | 7     |            |          |               |             |          |             |           |              |  |  |
| 1                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 2                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 3                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 4                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 5                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 6                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 7                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 8                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 9                                | 7     |            |          |               |             |          |             |           |              |  |  |
| 10                               | 7     |            |          |               |             |          |             |           |              |  |  |
| 11                               | 7     |            |          |               |             |          |             |           |              |  |  |
| 12                               | 7     |            |          |               |             |          |             |           |              |  |  |
| Course.                          | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |  |
|                                  |       |            |          |               |             |          |             |           |              |  |  |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |  |  |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|--|
| 1       | 7     |            |          |               |             |          |             |           |              |  |  |
| 2       | 7     |            |          |               |             |          |             |           |              |  |  |
| 3       | 7     |            |          |               |             |          |             |           |              |  |  |
| 4       | 7     |            |          |               |             |          |             |           |              |  |  |
| 5       | 7     |            |          |               |             |          |             |           |              |  |  |
| 6       | 7     |            |          |               |             |          |             |           |              |  |  |
| 7       | 7     |            |          |               |             |          |             |           |              |  |  |
| 8       | 7     |            |          |               |             |          |             |           |              |  |  |
| 9       | 7     |            |          |               |             |          |             |           |              |  |  |
| 10      | 7     |            |          |               |             |          |             |           |              |  |  |
| 11      | 7     |            |          |               |             |          |             |           |              |  |  |
| 12      | 7     |            |          |               |             |          |             |           |              |  |  |
| 1       | 7     |            |          |               |             |          |             |           |              |  |  |
| 2       | 7     |            |          |               |             |          |             |           |              |  |  |
| 3       | 7     |            |          |               |             |          |             |           |              |  |  |
| 4       | 7     |            |          |               |             |          |             |           |              |  |  |
| 5       | 7     |            |          |               |             |          |             |           |              |  |  |
| 6       | 7     |            |          |               |             |          |             |           |              |  |  |
| 7       | 7     |            |          |               |             |          |             |           |              |  |  |
| 8       | 7     |            |          |               |             |          |             |           |              |  |  |
| 9       | 7     |            |          |               |             |          |             |           |              |  |  |
| 10      | 7     |            |          |               |             |          |             |           |              |  |  |
| 11      | 7     |            |          |               |             |          |             |           |              |  |  |
| 12      | 7     |            |          |               |             |          |             |           |              |  |  |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |  |
|         | 200   |            |          |               |             |          |             |           |              |  |  |



| from <i>San Juan</i> towards <i>San Juan</i> |    |      |          |        |      |          |
|--|----|------|----------|--------|------|----------|
| H.   | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10   |    |      |          |        |      |          |
| 11   |    |      |          |        |      |          |
| 12   |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10   |    |      |          |        |      |          |
| 11   |    |      |          |        |      |          |
| 12   |    |      |          |        |      |          |

| Course.    | Dist.      | Diff. lat. | Dep.       | Lat. by D. R. | Lat. by Ob. | Varia.     | Diff. Long. | Long. in.     | Long. by Ob. |
|------------|------------|------------|------------|---------------|-------------|------------|-------------|---------------|--------------|
| <i>115</i> | <i>111</i> | <i>113</i> | <i>109</i> | <i>10050</i>  | <i>7450</i> | <i>118</i> | <i>50</i>   | <i>110.16</i> |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course.    | Dist.      | Diff. lat. | Dep.       | Lat. by D. R. | Lat. by Ob.  | Varia.     | Diff. Long. | Long. in.     | Long. by Ob. |
|------------|------------|------------|------------|---------------|--------------|------------|-------------|---------------|--------------|
| <i>156</i> | <i>119</i> | <i>2</i>   | <i>123</i> | <i>15235</i>  | <i>10225</i> | <i>107</i> | <i>20</i>   | <i>113.29</i> |              |



from  towards

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                      |
|----|----|-------|----------|--------|------|-------------------------------|
| 1  | 6  |       |          | W      |      | Commenced with a light breeze |
| 2  | 6  |       |          |        |      |                               |
| 3  | 6  |       |          |        |      |                               |
| 4  | 6  |       |          |        |      |                               |
| 5  | 6  |       |          |        |      |                               |
| 6  | 6  |       |          |        |      |                               |
| 7  | 6  |       |          |        |      |                               |
| 8  | 6  |       |          |        |      |                               |
| 9  | 6  |       |          |        |      | From daylight it increased    |
| 10 | 6  |       |          |        |      |                               |
| 11 | 6  |       |          |        |      |                               |
| 12 | 6  |       |          |        |      |                               |
| 1  | 3  |       |          |        |      |                               |
| 2  | 3  |       |          |        |      |                               |
| 3  | 3  |       |          |        |      |                               |
| 4  | 3  |       |          |        |      |                               |
| 5  | 3  |       |          |        |      |                               |
| 6  | 3  |       |          |        |      | Commenced with a light breeze |
| 7  | 3  |       |          |        |      |                               |
| 8  | 3  |       |          |        |      |                               |
| 9  | 3  |       |          |        |      |                               |
| 10 | 3  |       |          |        |      |                               |
| 11 | 3  |       |          |        |      |                               |
| 12 | 3  |       |          |        |      |                               |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|----------|-------------|-----------|--------------|
|         |       |            |      |               | 10 11 12    | 10 11 12 |             |           | 10 11 12     |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                      |
|----|----|-------|----------|--------|------|-------------------------------|
| 1  | 6  |       |          | W      |      | Commenced with a light breeze |
| 2  | 6  |       |          |        |      |                               |
| 3  | 6  |       |          |        |      |                               |
| 4  | 6  |       |          |        |      |                               |
| 5  | 6  |       |          |        |      |                               |
| 6  | 6  |       |          |        |      |                               |
| 7  | 6  |       |          |        |      |                               |
| 8  | 6  |       |          |        |      |                               |
| 9  | 6  |       |          |        |      |                               |
| 10 | 6  |       |          |        |      |                               |
| 11 | 6  |       |          |        |      |                               |
| 12 | 6  |       |          |        |      |                               |
| 1  | 3  |       |          |        |      |                               |
| 2  | 3  |       |          |        |      |                               |
| 3  | 3  |       |          |        |      |                               |
| 4  | 3  |       |          |        |      |                               |
| 5  | 3  |       |          |        |      |                               |
| 6  | 3  |       |          |        |      |                               |
| 7  | 3  |       |          |        |      |                               |
| 8  | 3  |       |          |        |      |                               |
| 9  | 3  |       |          |        |      |                               |
| 10 | 3  |       |          |        |      |                               |
| 11 | 3  |       |          |        |      |                               |
| 12 | 3  |       |          |        |      |                               |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|----------|-------------|-----------|--------------|
|         |       |            |      |               | 10 11 12    | 10 11 12 |             |           | 10 11 12     |



| from <i>10</i> towards <i>the</i> |    |      |          |        |      |          |
|-----------------------------------|----|------|----------|--------|------|----------|
| H.                                | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
| 1                                 | 3  |      |          |        |      |          |
| 2                                 | 3  |      |          |        |      |          |
| 3                                 | 1  |      |          |        |      |          |
| 4                                 | 4  |      |          |        |      |          |
| 5                                 | 4  |      |          |        |      |          |
| 6                                 | 4  |      |          |        |      |          |
| 7                                 | 4  |      |          |        |      |          |
| 8                                 | 4  |      |          |        |      |          |
| 9                                 | 4  |      |          |        |      |          |
| 10                                | 4  |      |          |        |      |          |
| 11                                | 3  | 1    |          |        |      |          |
| 12                                | 3  | 1    |          |        |      |          |
| 1                                 | 3  |      |          |        |      |          |
| 2                                 | 3  |      |          |        |      |          |
| 3                                 | 3  |      |          |        |      |          |
| 4                                 | 3  |      |          |        |      |          |
| 5                                 | 3  |      |          |        |      |          |
| 6                                 | 3  |      |          |        |      |          |
| 7                                 | 3  |      |          |        |      |          |
| 8                                 | 3  |      |          |        |      |          |
| 9                                 | 3  |      |          |        |      |          |
| 10                                | 3  |      |          |        |      |          |
| 11                                | 3  |      |          |        |      |          |
| 12                                | 3  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| from <i>10</i> towards <i>the</i> |    |      |          |        |      |          |
|-----------------------------------|----|------|----------|--------|------|----------|
| H.                                | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
| 1                                 | 3  |      |          |        |      |          |
| 2                                 | 3  |      |          |        |      |          |
| 3                                 | 3  |      |          |        |      |          |
| 4                                 | 3  |      |          |        |      |          |
| 5                                 | 3  |      |          |        |      |          |
| 6                                 | 3  |      |          |        |      |          |
| 7                                 | 6  |      |          |        |      |          |
| 8                                 | 6  |      |          |        |      |          |
| 9                                 | 6  |      |          |        |      |          |
| 10                                | 6  |      |          |        |      |          |
| 11                                | 6  |      |          |        |      |          |
| 12                                | 6  |      |          |        |      |          |
| 1                                 | 4  |      |          |        |      |          |
| 2                                 | 4  |      |          |        |      |          |
| 3                                 | 4  |      |          |        |      |          |
| 4                                 | 3  |      |          |        |      |          |
| 5                                 | 3  |      |          |        |      |          |
| 6                                 | 3  |      |          |        |      |          |
| 7                                 | 3  |      |          |        |      |          |
| 8                                 | 3  |      |          |        |      |          |
| 9                                 | 3  |      |          |        |      |          |
| 10                                | 3  |      |          |        |      |          |
| 11                                | 3  |      |          |        |      |          |
| 12                                | 3  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |







from

towards

| H.      | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 7     |            |          |               |             |          |             |           |              |
| 3       | 1     |            |          |               |             |          |             |           |              |
| 4       | 7     |            |          |               |             |          |             |           |              |
| 5       | 6     | 1          |          |               |             |          |             |           |              |
| 6       | 3     | 1          |          |               |             |          |             |           |              |
| 7       | 5     |            |          |               |             |          |             |           |              |
| 8       | 5     |            |          |               |             |          |             |           |              |
| 9       | 6     |            |          |               |             |          |             |           |              |
| 10      | 6     |            |          |               |             |          |             |           |              |
| 11      | 6     |            |          |               |             |          |             |           |              |
| 12      | 6     |            |          |               |             |          |             |           |              |
| 1       | 6     |            |          |               |             |          |             |           |              |
| 2       | 6     |            |          |               |             |          |             |           |              |
| 3       | 8     |            |          |               |             |          |             |           |              |
| 4       | 6     |            |          |               |             |          |             |           |              |
| 5       | 7     |            |          |               |             |          |             |           |              |
| 6       | 7     |            |          |               |             |          |             |           |              |
| 7       | 7     |            |          |               |             |          |             |           |              |
| 8       | 7     |            |          |               |             |          |             |           |              |
| 9       | 6     |            |          |               |             |          |             |           |              |
| 10      | 6     |            |          |               |             |          |             |           |              |
| 11      | 6     |            |          |               |             |          |             |           |              |
| 12      | 6     |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |

| H.      | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 1     |            |          |               |             |          |             |           |              |
| 3       | 1     |            |          |               |             |          |             |           |              |
| 4       | 8     |            |          |               |             |          |             |           |              |
| 5       | 8     |            |          |               |             |          |             |           |              |
| 6       | 6     |            |          |               |             |          |             |           |              |
| 7       | 7     |            |          |               |             |          |             |           |              |
| 8       | 7     |            |          |               |             |          |             |           |              |
| 9       | 7     |            |          |               |             |          |             |           |              |
| 10      | 3     |            |          |               |             |          |             |           |              |
| 11      | 3     |            |          |               |             |          |             |           |              |
| 12      | 4     |            |          |               |             |          |             |           |              |
| 1       | 4     |            |          |               |             |          |             |           |              |
| 2       | 8     |            |          |               |             |          |             |           |              |
| 3       | 7     |            |          |               |             |          |             |           |              |
| 4       | 8     |            |          |               |             |          |             |           |              |
| 5       | 7     |            |          |               |             |          |             |           |              |
| 6       | 7     |            |          |               |             |          |             |           |              |
| 7       | 7     |            |          |               |             |          |             |           |              |
| 8       | 7     |            |          |               |             |          |             |           |              |
| 9       | 7     |            |          |               |             |          |             |           |              |
| 10      | 7     |            |          |               |             |          |             |           |              |
| 11      | 7     |            |          |               |             |          |             |           |              |
| 12      | 7     |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |



| from <i>from</i> towards <i>towards</i> |    |       |          |            |      |               |             |        |             |           |              |
|---|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| H.                                      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
| 1                                       |    |       |          |            |      |               |             |        |             |           |              |
| 2                                       |    |       |          |            |      |               |             |        |             |           |              |
| 3                                       |    |       |          |            |      |               |             |        |             |           |              |
| 4                                       |    |       |          |            |      |               |             |        |             |           |              |
| 5                                       |    |       |          |            |      |               |             |        |             |           |              |
| 6                                       |    |       |          |            |      |               |             |        |             |           |              |
| 7                                       |    |       |          |            |      |               |             |        |             |           |              |
| 8                                       |    |       |          |            |      |               |             |        |             |           |              |
| 9                                       |    |       |          |            |      |               |             |        |             |           |              |
| 10                                      |    |       |          |            |      |               |             |        |             |           |              |
| 11                                      |    |       |          |            |      |               |             |        |             |           |              |
| 12                                      |    |       |          |            |      |               |             |        |             |           |              |
| 1                                       |    |       |          |            |      |               |             |        |             |           |              |
| 2                                       |    |       |          |            |      |               |             |        |             |           |              |
| 3                                       |    |       |          |            |      |               |             |        |             |           |              |
| 4                                       |    |       |          |            |      |               |             |        |             |           |              |
| 5                                       |    |       |          |            |      |               |             |        |             |           |              |
| 6                                       |    |       |          |            |      |               |             |        |             |           |              |
| 7                                       |    |       |          |            |      |               |             |        |             |           |              |
| 8                                       |    |       |          |            |      |               |             |        |             |           |              |
| 9                                       |    |       |          |            |      |               |             |        |             |           |              |
| 10                                      |    |       |          |            |      |               |             |        |             |           |              |
| 11                                      |    |       |          |            |      |               |             |        |             |           |              |
| 12                                      |    |       |          |            |      |               |             |        |             |           |              |
| Course.                                 |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|   |    |       |          |            |      |               | 39° 2'      |        |             |           | 125° 15'     |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               | 125° 15'    |        |             |           | 125° 15'     |



from *from* towards *towards*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



Ship *Enterprise* from *St. John* towards *London*

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       | 2  |       |          |            |      |               |             |        |             |           |              |
| 2       | 3  |       |          |            |      |               |             |        |             |           |              |
| 3       | 4  |       |          |            |      |               |             |        |             |           |              |
| 4       | 5  |       |          |            |      |               |             |        |             |           |              |
| 5       | 6  |       |          |            |      |               |             |        |             |           |              |
| 6       | 7  |       |          |            |      |               |             |        |             |           |              |
| 7       | 8  |       |          |            |      |               |             |        |             |           |              |
| 8       | 9  |       |          |            |      |               |             |        |             |           |              |
| 9       | 10 |       |          |            |      |               |             |        |             |           |              |
| 10      | 11 |       |          |            |      |               |             |        |             |           |              |
| 11      | 12 |       |          |            |      |               |             |        |             |           |              |
| 1       | 2  |       |          |            |      |               |             |        |             |           |              |
| 2       | 3  |       |          |            |      |               |             |        |             |           |              |
| 3       | 4  |       |          |            |      |               |             |        |             |           |              |
| 4       | 5  |       |          |            |      |               |             |        |             |           |              |
| 5       | 6  |       |          |            |      |               |             |        |             |           |              |
| 6       | 7  |       |          |            |      |               |             |        |             |           |              |
| 7       | 8  |       |          |            |      |               |             |        |             |           |              |
| 8       | 9  |       |          |            |      |               |             |        |             |           |              |
| 9       | 10 |       |          |            |      |               |             |        |             |           |              |
| 10      | 11 |       |          |            |      |               |             |        |             |           |              |
| 11      | 12 |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               |             |        |             |           |              |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       | 2  |       |          |            |      |               |             |        |             |           |              |
| 2       | 3  |       |          |            |      |               |             |        |             |           |              |
| 3       | 4  |       |          |            |      |               |             |        |             |           |              |
| 4       | 5  |       |          |            |      |               |             |        |             |           |              |
| 5       | 6  |       |          |            |      |               |             |        |             |           |              |
| 6       | 7  |       |          |            |      |               |             |        |             |           |              |
| 7       | 8  |       |          |            |      |               |             |        |             |           |              |
| 8       | 9  |       |          |            |      |               |             |        |             |           |              |
| 9       | 10 |       |          |            |      |               |             |        |             |           |              |
| 10      | 11 |       |          |            |      |               |             |        |             |           |              |
| 11      | 12 |       |          |            |      |               |             |        |             |           |              |
| 1       | 2  |       |          |            |      |               |             |        |             |           |              |
| 2       | 3  |       |          |            |      |               |             |        |             |           |              |
| 3       | 4  |       |          |            |      |               |             |        |             |           |              |
| 4       | 5  |       |          |            |      |               |             |        |             |           |              |
| 5       | 6  |       |          |            |      |               |             |        |             |           |              |
| 6       | 7  |       |          |            |      |               |             |        |             |           |              |
| 7       | 8  |       |          |            |      |               |             |        |             |           |              |
| 8       | 9  |       |          |            |      |               |             |        |             |           |              |
| 9       | 10 |       |          |            |      |               |             |        |             |           |              |
| 10      | 11 |       |          |            |      |               |             |        |             |           |              |
| 11      | 12 |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               |             |        |             |           |              |



from *the Gulf* towards *the North*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  | 1    |          | West   |      |          |
| 2  | 1  | 1    |          |        |      |          |
| 3  | 2  | 1    |          |        |      |          |
| 4  | 6  |      |          |        |      |          |
| 5  | 2  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  | 1    |          |        |      |          |
| 10 | 2  |      |          |        |      |          |
| 11 | 4  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |
| 1  | 1  |      |          |        |      |          |
| 2  | 6  |      |          |        |      |          |
| 3  | 0  |      |          |        |      |          |
| 4  | 0  |      |          |        |      |          |
| 5  | 2  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 0  |      |          |        |      |          |
| 8  | 2  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 3  |      |          |        |      |          |
| 12 | 2  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  | 1    |          | West   |      |          |
| 2  | 1  | 1    |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 6  |      |          |        |      |          |
| 5  | 2  |      |          |        |      |          |
| 6  | 2  |      |          |        |      |          |
| 7  | 2  | 1    |          |        |      |          |
| 8  | 2  |      |          |        |      |          |
| 9  | 3  |      |          |        |      |          |
| 10 | 3  |      |          |        |      |          |
| 11 | 3  |      |          |        |      |          |
| 12 | 3  |      |          |        |      |          |
| 1  | 4  |      |          |        |      |          |
| 2  | 4  |      |          |        |      |          |
| 3  | 6  |      |          |        |      |          |
| 4  | 6  |      |          |        |      |          |
| 5  | 2  |      |          |        |      |          |
| 6  | 2  |      |          |        |      |          |
| 7  | 2  |      |          |        |      |          |
| 8  | 2  |      |          |        |      |          |
| 9  | 2  |      |          |        |      |          |
| 10 | 3  |      |          |        |      |          |
| 11 | 2  |      |          |        |      |          |
| 12 | 2  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



| from   |    | towards |          |        |      |                       |
|--------|----|---------|----------|--------|------|-----------------------|
| ll.    | K. | ll. K.  | Courses. | Winds. | Lec. | Remarks.              |
| 1      | .  |         |          |        |      | 1st land sighted 5:45 |
| 2      | .  |         |          |        |      |                       |
| 3      | 4  |         |          |        |      |                       |
| 4      | 4  |         |          |        |      |                       |
| 5      | 3  |         |          |        |      |                       |
| 6      | 6  |         |          |        |      |                       |
| 7      | 6  |         |          |        |      |                       |
| 8      | 6  |         |          |        |      |                       |
| 9      | 6  |         |          |        |      |                       |
| 10     | 6  |         |          |        |      |                       |
| 11     | 6  |         |          |        |      |                       |
| 12     | 6  |         |          |        |      |                       |
| 1      | 5  |         |          |        |      |                       |
| 2      | 3  |         |          |        |      |                       |
| 3      | 6  |         |          |        |      |                       |
| 4      | 5  |         |          |        |      |                       |
| 5      | 6  |         |          |        |      |                       |
| 6      | 6  |         |          |        |      |                       |
| 7      | 5  |         |          |        |      |                       |
| 8      | 2  |         |          |        |      |                       |
| 9      | 2  |         |          |        |      |                       |
| 10     | 1  | 1       |          |        |      |                       |
| 11     | 1  | 1       |          |        |      |                       |
| 12     | 7  | 1       |          |        |      |                       |
| Totals |    |         |          |        |      |                       |
|        |    |         |          |        |      | 1° 9'                 |

| ll.    | K. | ll. K. | Courses. | Winds. | Lec. | Remarks.              |
|--------|----|--------|----------|--------|------|-----------------------|
| 1      | .  |        |          |        |      | 1st land sighted 5:45 |
| 2      | .  |        |          |        |      |                       |
| 3      | 7  |        |          |        |      |                       |
| 4      | 7  |        |          |        |      |                       |
| 5      | 7  |        |          |        |      |                       |
| 6      | 7  |        |          |        |      |                       |
| 7      | 7  |        |          |        |      |                       |
| 8      | 7  |        |          |        |      |                       |
| 9      | 7  |        |          |        |      |                       |
| 10     | 7  |        |          |        |      |                       |
| 11     | 7  |        |          |        |      |                       |
| 12     | 7  |        |          |        |      |                       |
| 1      | 7  |        |          |        |      |                       |
| 2      | 7  |        |          |        |      |                       |
| 3      | 7  |        |          |        |      |                       |
| 4      | 7  |        |          |        |      |                       |
| 5      | 7  |        |          |        |      |                       |
| 6      | 7  |        |          |        |      |                       |
| 7      | 7  |        |          |        |      |                       |
| 8      | 7  |        |          |        |      |                       |
| 9      | 7  |        |          |        |      |                       |
| 10     | 7  |        |          |        |      |                       |
| 11     | 7  |        |          |        |      |                       |
| 12     | 7  |        |          |        |      |                       |
| Totals |    |        |          |        |      |                       |
|        |    |        |          |        |      | 1° 0'                 |



from *the Cape* towards *the shore*

| H. | K. | HLK. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 4  |      |          |        |      |          |
| 2  | 4  |      |          |        |      |          |
| 3  | 4  |      |          |        |      |          |
| 4  | 7  |      |          |        |      |          |
| 5  | 7  |      |          |        |      |          |
| 6  | 6  | 1    |          |        |      |          |
| 7  | 6  | 1    |          |        |      |          |
| 8  | 6  |      |          |        |      |          |
| 9  | 6  |      |          |        |      |          |
| 10 | 6  |      |          |        |      |          |
| 11 | 6  |      |          |        |      |          |
| 12 | 4  |      |          |        |      |          |
| 1  | 4  |      |          |        |      |          |
| 2  | 4  |      |          |        |      |          |
| 3  | 6  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 4  |      |          |        |      |          |
| 12 | 4  |      |          |        |      |          |

| Courses. | Dist. | Lat. lat. | Dep. | Lat. by D. R. | Lat. by Obs. | Varia. | Diff. Long. | Long. in. | Long. by Obs. |
|----------|-------|-----------|------|---------------|--------------|--------|-------------|-----------|---------------|
|          |       |           |      |               |              |        |             |           |               |

| H. | K. | HLK. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 3  |      |          |        |      |          |
| 2  | 3  |      |          |        |      |          |
| 3  | 3  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  | 3  |      |          |        |      |          |
| 6  | 3  |      |          |        |      |          |
| 7  | 3  |      |          |        |      |          |
| 8  | 3  |      |          |        |      |          |
| 9  | 3  |      |          |        |      |          |
| 10 | 3  |      |          |        |      |          |
| 11 | 3  |      |          |        |      |          |
| 12 | 3  |      |          |        |      |          |
| 1  | 4  | 1    |          |        |      |          |
| 2  | 4  | 1    |          |        |      |          |
| 3  | 4  | 1    |          |        |      |          |
| 4  | 4  | 1    |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 8  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |

| Courses. | Dist. | Lat. lat. | Dep. | Lat. by D. R. | Lat. by Obs. | Varia. | Diff. Long. | Long. in. | Long. by Obs. |
|----------|-------|-----------|------|---------------|--------------|--------|-------------|-----------|---------------|
|          |       |           |      |               |              |        |             |           |               |



| Sailing from <i>Port of New York</i> towards <i>London</i> |    |      |          |            |      |                              |             |        |             |           |              |
|--|----|------|----------|------------|------|------------------------------|-------------|--------|-------------|-----------|--------------|
| H.   | K. | H.K. | Courses. | Winds.     | Lee. | Remarks.                     |             |        |             |           |              |
| 1  | 7  | 1    | 178      | 14         |      |                              |             |        |             |           |              |
| 2  | 7  | 1    | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 3  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 4  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 5  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 6  | 7  | 1    | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 7  | 7  | 1    | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 8  | 7  | 1    | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 9  | 7  | 1    | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 10   | 7  | 1    | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 11   | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 12   | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 1  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 2  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 3  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 4  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 5  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 6  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 7  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 8  | 6  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 9  | 7  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 10   | 7  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 11   | 7  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 12   | 7  |      | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| Course.  |    |      | Dist.    | Diff. Lat. | Dep. | Lat. by D.R.                 | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|  |    |      |          |            |      |                              | 41° 45'     |        |             |           |              |

| Sailing from <i>Port of New York</i> towards <i>London</i> |    |      |          |            |      |                              |             |        |             |           |              |
|--|----|------|----------|------------|------|------------------------------|-------------|--------|-------------|-----------|--------------|
| H.   | K. | H.K. | Courses. | Winds.     | Lee. | Remarks.                     |             |        |             |           |              |
| 1  | 7  | 1    | 178      | 14         |      |                              |             |        |             |           |              |
| 2  | 7  | 1    | 178      |            |      | continued with strong breeze |             |        |             |           |              |
| 3  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 4  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 5  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 6  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 7  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 8  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 9  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 10   | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 11   | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 12   | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 1  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 2  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 3  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 4  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 5  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 6  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 7  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 8  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 9  | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 10   | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 11   | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| 12   | 7  | 1    | 178      |            |      | continued                    |             |        |             |           |              |
| Course.  |    |      | Dist.    | Diff. Lat. | Dep. | Lat. by D.R.                 | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|  |    |      |          |            |      |                              | 41° 45'     |        |             |           | 135° 13'     |



Shipping from New York towards ...

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                          |
|----|----|------|----------|--------|------|-----------------------------------|
| 1  | 6  |      | W. by S. | 1 1/2  | 2    |                                   |
| 2  | 6  |      |          |        |      | Commenced with strong gale        |
| 3  | 6  |      |          |        |      | fair weather                      |
| 4  | 6  |      |          |        |      |                                   |
| 5  | 6  |      |          |        |      |                                   |
| 6  | 6  |      |          |        |      | Shifted ship to the Westward      |
| 7  | 6  |      |          |        |      |                                   |
| 8  | 6  |      |          |        |      | 2 1/2 m. S. by E. by S. haul sail |
| 9  | 6  |      |          |        |      |                                   |
| 10 | 6  |      |          |        |      | 3 m. S. by E. by S. haul sail     |
| 11 | 6  |      |          |        |      |                                   |
| 12 | 6  |      |          |        |      | 4 m. S. by E. by S. haul sail     |
| 1  | 6  |      |          |        |      |                                   |
| 2  | 6  |      |          |        |      | 5 m. S. by E. by S. haul sail     |
| 3  | 6  |      |          |        |      |                                   |
| 4  | 6  |      |          |        |      | 6 m. S. by E. by S. haul sail     |
| 5  | 6  |      |          |        |      | 7 m. S. by E. by S. haul sail     |
| 6  | 6  |      |          |        |      | 8 m. S. by E. by S. haul sail     |
| 7  | 6  |      |          |        |      | Midnight. Hauled Main sail        |
| 8  | 6  |      |          |        |      |                                   |
| 9  | 6  |      |          |        |      | End with strong gale              |
| 10 | 6  |      |          |        |      |                                   |
| 11 | 6  |      |          |        |      | End weather                       |
| 12 | 6  |      |          |        |      |                                   |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Obs. | Var. | Diff. Long. | Long. by D. R. | Long. by Obs. |
|---------|-------|------------|------|---------------|--------------|------|-------------|----------------|---------------|
|         |       |            |      |               |              |      |             |                |               |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                       |
|----|----|------|----------|--------|------|--------------------------------|
| 1  | 4  |      | W. by S. | 1 1/2  | 2    |                                |
| 2  | 4  |      |          |        |      | Commenced with strong gale     |
| 3  | 4  |      |          |        |      | fair weather                   |
| 4  | 4  |      |          |        |      |                                |
| 5  | 4  |      |          |        |      |                                |
| 6  | 4  |      |          |        |      | Shifted ship to the Westward   |
| 7  | 4  |      |          |        |      |                                |
| 8  | 4  |      |          |        |      | Through the misty weather      |
| 9  | 4  |      |          |        |      |                                |
| 10 | 4  |      |          |        |      | 6 m. S. by E. by S. haul sail  |
| 11 | 4  |      |          |        |      |                                |
| 12 | 4  |      |          |        |      | 7 m. S. by E. by S. haul sail  |
| 1  | 4  |      |          |        |      | 8 m. S. by E. by S. haul sail  |
| 2  | 4  |      |          |        |      | 9 m. S. by E. by S. haul sail  |
| 3  | 4  |      |          |        |      | 10 m. S. by E. by S. haul sail |
| 4  | 4  |      |          |        |      | 11 m. S. by E. by S. haul sail |
| 5  | 4  |      |          |        |      | 12 m. S. by E. by S. haul sail |
| 6  | 4  |      |          |        |      | 13 m. S. by E. by S. haul sail |
| 7  | 4  |      |          |        |      | 14 m. S. by E. by S. haul sail |
| 8  | 4  |      |          |        |      | 15 m. S. by E. by S. haul sail |
| 9  | 4  |      |          |        |      | 16 m. S. by E. by S. haul sail |
| 10 | 4  |      |          |        |      | 17 m. S. by E. by S. haul sail |
| 11 | 4  |      |          |        |      | 18 m. S. by E. by S. haul sail |
| 12 | 4  |      |          |        |      | 19 m. S. by E. by S. haul sail |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Obs. | Var. | Diff. Long. | Long. by D. R. | Long. by Obs. |
|---------|-------|------------|------|---------------|--------------|------|-------------|----------------|---------------|
|         |       |            |      |               |              |      |             |                |               |



| from <i>York</i> towards <i>the North</i> |       |            |          |               |             |          |             |           |              |      |
|---|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|------|
| II.                                       | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |      |
| 1   | 3     |            |          |               |             |          |             |           |              |      |
| 2   | 3     |            |          |               |             |          |             |           |              |      |
| 3   | 3     |            |          |               |             |          |             |           |              |      |
| 4   | 3     |            |          |               |             |          |             |           |              |      |
| 5   | 3     |            |          |               |             |          |             |           |              |      |
| 6   | 3     |            |          |               |             |          |             |           |              |      |
| 7   | 3     |            |          |               |             |          |             |           |              |      |
| 8   | 3     |            |          |               |             |          |             |           |              |      |
| 9   | 3     |            |          |               |             |          |             |           |              |      |
| 10  | 3     |            |          |               |             |          |             |           |              |      |
| 11  | 3     |            |          |               |             |          |             |           |              |      |
| 12  | 3     |            |          |               |             |          |             |           |              |      |
| 1   | 3     |            |          |               |             |          |             |           |              |      |
| 2   | 3     |            |          |               |             |          |             |           |              |      |
| 3   | 3     |            |          |               |             |          |             |           |              |      |
| 4   | 3     |            |          |               |             |          |             |           |              |      |
| 5   | 3     |            |          |               |             |          |             |           |              |      |
| 6   | 3     |            |          |               |             |          |             |           |              |      |
| 7   | 3     |            |          |               |             |          |             |           |              |      |
| 8   | 3     |            |          |               |             |          |             |           |              |      |
| 9   | 3     |            |          |               |             |          |             |           |              |      |
| 10  | 3     |            |          |               |             |          |             |           |              |      |
| 11  | 3     |            |          |               |             |          |             |           |              |      |
| 12  | 3     |            |          |               |             |          |             |           |              |      |
| Course.                                   | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |      |
|   |       |            |          |               |             |          |             |           |              | 8756 |

| II.     | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |  |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|
| 1       | 3     |            |          |               |             |          |             |           |              |  |
| 2       | 3     |            |          |               |             |          |             |           |              |  |
| 3       | 3     |            |          |               |             |          |             |           |              |  |
| 4       | 3     |            |          |               |             |          |             |           |              |  |
| 5       | 3     |            |          |               |             |          |             |           |              |  |
| 6       | 3     |            |          |               |             |          |             |           |              |  |
| 7       | 3     |            |          |               |             |          |             |           |              |  |
| 8       | 3     |            |          |               |             |          |             |           |              |  |
| 9       | 3     |            |          |               |             |          |             |           |              |  |
| 10      | 3     |            |          |               |             |          |             |           |              |  |
| 11      | 3     |            |          |               |             |          |             |           |              |  |
| 12      | 3     |            |          |               |             |          |             |           |              |  |
| 1       | 3     |            |          |               |             |          |             |           |              |  |
| 2       | 3     |            |          |               |             |          |             |           |              |  |
| 3       | 3     |            |          |               |             |          |             |           |              |  |
| 4       | 3     |            |          |               |             |          |             |           |              |  |
| 5       | 3     |            |          |               |             |          |             |           |              |  |
| 6       | 3     |            |          |               |             |          |             |           |              |  |
| 7       | 3     |            |          |               |             |          |             |           |              |  |
| 8       | 3     |            |          |               |             |          |             |           |              |  |
| 9       | 3     |            |          |               |             |          |             |           |              |  |
| 10      | 3     |            |          |               |             |          |             |           |              |  |
| 11      | 3     |            |          |               |             |          |             |           |              |  |
| 12      | 3     |            |          |               |             |          |             |           |              |  |
| Course. | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |
| 16.51   | 12.5  | 67         | 115      | 6°29'11"      | 6°11'       | 11m      | 106         | 1°18'11"  | 1°18'11"     |  |



... from ... towards ...

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 8  |      |          |        |      |          |
| 2  | 8  |      |          |        |      |          |
| 3  | 8  |      |          |        |      |          |
| 4  | 8  |      |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 8  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |
| 1  | 8  |      |          |        |      |          |
| 2  | 8  |      |          |        |      |          |
| 3  | 8  |      |          |        |      |          |
| 4  | 8  |      |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 8  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. by D. R. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|----------------|--------------|
|          |       |            |      |               | 6. 4. 8     |        |             |                | 44. 1. 4     |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 8  |      |          |        |      |          |
| 2  | 8  |      |          |        |      |          |
| 3  | 8  |      |          |        |      |          |
| 4  | 8  |      |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 8  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |
| 1  | 8  |      |          |        |      |          |
| 2  | 8  |      |          |        |      |          |
| 3  | 8  |      |          |        |      |          |
| 4  | 8  |      |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 8  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. by D. R. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|----------------|--------------|
|          |       |            |      |               | 6. 5. 5     |        |             |                | 44. 1. 4     |



| from <i>the North</i> towards <i>the South</i> |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
|--|----|-------|----------|------------|------|----------|--|---------------|--|-------------|--|--------|--|-------------|--|-----------|--|--------------|--|
| H.   | K. | H. K. | Courses. | Winds.     | Lee. | Remarks. |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 1  | 1  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 2  | 1  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 3  | 1  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 4  | 1  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 5  | 1  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 6  | 1  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 7  | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 8  | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 9  | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 10   | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 11   | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 12   | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 1  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 2  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 3  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 4  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 5  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 6  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 7  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 8  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 9  | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 10   | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 11   | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 12   | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| Course.  |    | Dist. |          | Diff. lat. |      | Dep.     |  | Lat. by D. R. |  | Lat. by Ob. |  | Varia. |  | Diff. Long. |  | Long. in. |  | Long. by Ob. |  |
|  |    |       |          |            |      |          |  |               |  | 11'         |  |        |  |             |  |           |  |              |  |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks. |  |               |  |             |  |        |  |             |  |           |  |              |  |
|---------|----|-------|----------|------------|------|----------|--|---------------|--|-------------|--|--------|--|-------------|--|-----------|--|--------------|--|
| 1       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 2       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 3       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 4       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 5       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 6       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 7       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 8       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 9       | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 10      | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 11      | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 12      | 1  | 1     |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 1       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 2       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 3       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 4       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 5       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 6       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 7       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 8       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 9       | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 10      | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 11      | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 12      | 2  |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| Course. |    | Dist. |          | Diff. lat. |      | Dep.     |  | Lat. by D. R. |  | Lat. by Ob. |  | Varia. |  | Diff. Long. |  | Long. in. |  | Long. by Ob. |  |
|         |    |       |          |            |      |          |  |               |  | 91 1/2'     |  |        |  |             |  |           |  | 129° 57'     |  |



from *W. of S.* towards *N. E. S. E.*

| H. | K. | H.K. | Courses.         | Winds.     | Lec. | Remarks.                                 |
|----|----|------|------------------|------------|------|--|
| 1  | 1  |      | <i>1/4 N. E.</i> | <i>1/2</i> |      | <i>Common with shore breezes passing</i> |
| 2  | 1  |      |                  |            |      | <i>sparsely</i>                          |
| 3  | 1  |      |                  |            |      |  |
| 4  | 1  |      |                  |            |      |  |
| 5  | 1  |      |                  |            |      |  |
| 6  | 1  |      | <i>1/4 N. E.</i> |            |      | <i>Landed near midday must not</i>       |
| 7  | 1  |      |                  |            |      | <i>stay</i>                              |
| 8  | 1  |      |                  |            |      |  |
| 9  | 1  |      |                  |            |      |  |
| 10 | 1  |      |                  |            |      | <i>at 11 o'clock small boat</i>          |
| 11 | 1  |      |                  |            |      | <i>put in off shore with</i>             |
| 12 | 1  |      |                  |            |      | <i>from the N. E. side</i>               |
| 1  | 1  |      |                  |            |      |  |
| 2  | 1  |      |                  |            |      |  |
| 3  | 1  |      |                  |            |      |  |
| 4  | 1  |      | <i>1/4 N. E.</i> |            |      | <i>common with shore breezes</i>         |
| 5  | 1  |      |                  |            |      | <i>the N. E. side of the island</i>      |
| 6  | 1  |      |                  |            |      |  |
| 7  | 1  |      |                  |            |      |  |
| 8  | 1  |      |                  |            |      |  |
| 9  | 1  |      |                  |            |      | <i>at 11 o'clock small boat</i>          |
| 10 | 1  |      |                  |            |      |  |
| 11 | 1  |      |                  |            |      |  |
| 12 | 1  |      |                  |            |      |  |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob.     |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|------------------|
|         |       |            |      |               |             |        |             |           | <i>12 5 15.8</i> |

| H. | K. | H.K. | Courses.         | Winds.     | Lec. | Remarks.                                 |
|----|----|------|------------------|------------|------|--|
| 1  | 1  | 1    | <i>1/4 N. E.</i> | <i>1/2</i> |      | <i>Common with shore breezes passing</i> |
| 2  | 1  | 1    |                  |            |      | <i>sparsely</i>                          |
| 3  | 1  | 1    |                  |            |      |  |
| 4  | 1  | 1    |                  |            |      |  |
| 5  | 1  | 1    |                  |            |      |  |
| 6  | 1  | 1    |                  |            |      | <i>at 11 o'clock small boat</i>          |
| 7  | 1  | 1    |                  |            |      | <i>put in off shore with</i>             |
| 8  | 1  | 1    |                  |            |      | <i>from the N. E. side</i>               |
| 9  | 1  | 1    | <i>1/4 N. E.</i> |            |      |  |
| 10 | 1  | 1    |                  |            |      | <i>common with shore breezes</i>         |
| 11 | 1  | 1    | <i>1/4 N. E.</i> |            |      | <i>the N. E. side of the island</i>      |
| 12 | 1  | 1    |                  |            |      | <i>at 11 o'clock small boat</i>          |
| 1  | 1  | 1    |                  |            |      |  |
| 2  | 1  | 1    |                  |            |      |  |
| 3  | 1  | 1    | <i>1/4 N. E.</i> |            |      | <i>common with shore breezes</i>         |
| 4  | 1  | 1    |                  |            |      | <i>the N. E. side of the island</i>      |
| 5  | 1  | 1    |                  |            |      |  |
| 6  | 1  | 1    |                  |            |      | <i>at 11 o'clock small boat</i>          |
| 7  | 1  | 1    |                  |            |      | <i>put in off shore with</i>             |
| 8  | 1  | 1    | <i>1/4 N. E.</i> |            |      | <i>from the N. E. side</i>               |
| 9  | 1  | 1    |                  |            |      | <i>common with shore breezes</i>         |
| 10 | 1  | 1    | <i>1/4 N. E.</i> |            |      | <i>the N. E. side of the island</i>      |
| 11 | 1  | 1    |                  |            |      | <i>at 11 o'clock small boat</i>          |
| 12 | 1  | 1    |                  |            |      |  |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob.     |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|------------------|
|         |       |            |      |               |             |        |             |           | <i>12 5 15.8</i> |



From the Harbor from New York towards ...

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----|----|-------|----------|--------|------|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 2  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 3  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 4  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 5  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 6  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 7  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 8  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 9  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 10 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 11 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 12 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 1  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 2  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 3  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 4  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 5  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 6  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 7  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 8  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 9  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 10 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 11 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 12 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
|    |    |       |          |        |      |          | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|    |    |       |          |        |      |          |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----|----|-------|----------|--------|------|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 2  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 3  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 4  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 5  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 6  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 7  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 8  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 9  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 10 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 11 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 12 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 1  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 2  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 3  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 4  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 5  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 6  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 7  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 8  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 9  | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 10 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 11 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
| 12 | /  |       |          |        |      |          |       |            |      |               |             |        |             |           |              |
|    |    |       |          |        |      |          | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|    |    |       |          |        |      |          |       |            |      |               |             |        |             |           |              |



| from <i>100 fathoms</i> towards <i>the shore</i> |       |            |          |               |             |          |
|--|-------|------------|----------|---------------|-------------|----------|
| H.   | K.    | H.K.       | Courses. | Winds.        | Lec.        | Remarks. |
| 1  |       |            |          |               |             |          |
| 2  |       |            |          |               |             |          |
| 3  | 1     |            |          |               |             |          |
| 4  | 1     |            |          |               |             |          |
| 5  | 4     |            |          |               |             |          |
| 6  | 3     |            |          |               |             |          |
| 7  | 3     |            |          |               |             |          |
| 8  | 6     |            |          |               |             |          |
| 9  | 6     |            |          |               |             |          |
| 10   | 6     |            |          |               |             |          |
| 11   | 6     |            |          |               |             |          |
| 12   | 6     |            |          |               |             |          |
| 1  | 1     |            |          |               |             |          |
| 2  | 1     |            |          |               |             |          |
| 3  | 7     |            |          |               |             |          |
| 4  | 7     |            |          |               |             |          |
| 5  |       |            |          |               |             |          |
| 6  |       |            |          |               |             |          |
| 7  |       |            |          |               |             |          |
| 8  |       |            |          |               |             |          |
| 9  |       |            |          |               |             |          |
| 10   |       |            |          |               |             |          |
| 11   |       |            |          |               |             |          |
| 12   |       |            |          |               |             |          |
| Course.  | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   |
|  |       |            |          |               |             |          |

| H.      | K.    | H.K.       | Courses. | Winds.        | Lec.        | Remarks. |
|---------|-------|------------|----------|---------------|-------------|----------|
| 1       |       |            |          |               |             |          |
| 2       |       |            |          |               |             |          |
| 3       |       |            |          |               |             |          |
| 4       |       |            |          |               |             |          |
| 5       |       |            |          |               |             |          |
| 6       |       |            |          |               |             |          |
| 7       |       |            |          |               |             |          |
| 8       |       |            |          |               |             |          |
| 9       |       |            |          |               |             |          |
| 10      |       |            |          |               |             |          |
| 11      |       |            |          |               |             |          |
| 12      |       |            |          |               |             |          |
| 1       |       |            |          |               |             |          |
| 2       |       |            |          |               |             |          |
| 3       |       |            |          |               |             |          |
| 4       |       |            |          |               |             |          |
| 5       |       |            |          |               |             |          |
| 6       |       |            |          |               |             |          |
| 7       |       |            |          |               |             |          |
| 8       |       |            |          |               |             |          |
| 9       |       |            |          |               |             |          |
| 10      |       |            |          |               |             |          |
| 11      |       |            |          |               |             |          |
| 12      |       |            |          |               |             |          |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   |
|         |       |            |          |               |             |          |



1.2.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30.31.32.33.34.35.36.37.38.39.40.41.42.43.44.45.46.47.48.49.50.51.52.53.54.55.56.57.58.59.60.61.62.63.64.65.66.67.68.69.70.71.72.73.74.75.76.77.78.79.80.81.82.83.84.85.86.87.88.89.90.91.92.93.94.95.96.97.98.99.100.101.102.103.104.105.106.107.108.109.110.111.112.113.114.115.116.117.118.119.120.121.122.123.124.125.126.127.128.129.130.131.132.133.134.135.136.137.138.139.140.141.142.143.144.145.146.147.148.149.150.151.152.153.154.155.156.157.158.159.160.161.162.163.164.165.166.167.168.169.170.171.172.173.174.175.176.177.178.179.180.181.182.183.184.185.186.187.188.189.190.191.192.193.194.195.196.197.198.199.200.201.202.203.204.205.206.207.208.209.210.211.212.213.214.215.216.217.218.219.220.221.222.223.224.225.226.227.228.229.230.231.232.233.234.235.236.237.238.239.240.241.242.243.244.245.246.247.248.249.250.251.252.253.254.255.256.257.258.259.260.261.262.263.264.265.266.267.268.269.270.271.272.273.274.275.276.277.278.279.280.281.282.283.284.285.286.287.288.289.290.291.292.293.294.295.296.297.298.299.300.301.302.303.304.305.306.307.308.309.310.311.312.313.314.315.316.317.318.319.320.321.322.323.324.325.326.327.328.329.330.331.332.333.334.335.336.337.338.339.340.341.342.343.344.345.346.347.348.349.350.351.352.353.354.355.356.357.358.359.360.361.362.363.364.365.366.367.368.369.370.371.372.373.374.375.376.377.378.379.380.381.382.383.384.385.386.387.388.389.390.391.392.393.394.395.396.397.398.399.400.401.402.403.404.405.406.407.408.409.410.411.412.413.414.415.416.417.418.419.420.421.422.423.424.425.426.427.428.429.430.431.432.433.434.435.436.437.438.439.440.441.442.443.444.445.446.447.448.449.450.451.452.453.454.455.456.457.458.459.460.461.462.463.464.465.466.467.468.469.470.471.472.473.474.475.476.477.478.479.480.481.482.483.484.485.486.487.488.489.490.491.492.493.494.495.496.497.498.499.500.501.502.503.504.505.506.507.508.509.510.511.512.513.514.515.516.517.518.519.520.521.522.523.524.525.526.527.528.529.530.531.532.533.534.535.536.537.538.539.540.541.542.543.544.545.546.547.548.549.550.551.552.553.554.555.556.557.558.559.560.561.562.563.564.565.566.567.568.569.570.571.572.573.574.575.576.577.578.579.580.581.582.583.584.585.586.587.588.589.590.591.592.593.594.595.596.597.598.599.600.601.602.603.604.605.606.607.608.609.610.611.612.613.614.615.616.617.618.619.620.621.622.623.624.625.626.627.628.629.630.631.632.633.634.635.636.637.638.639.640.641.642.643.644.645.646.647.648.649.650.651.652.653.654.655.656.657.658.659.660.661.662.663.664.665.666.667.668.669.670.671.672.673.674.675.676.677.678.679.680.681.682.683.684.685.686.687.688.689.690.691.692.693.694.695.696.697.698.699.700.701.702.703.704.705.706.707.708.709.710.711.712.713.714.715.716.717.718.719.720.721.722.723.724.725.726.727.728.729.730.731.732.733.734.735.736.737.738.739.740.741.742.743.744.745.746.747.748.749.750.751.752.753.754.755.756.757.758.759.760.761.762.763.764.765.766.767.768.769.770.771.772.773.774.775.776.777.778.779.780.781.782.783.784.785.786.787.788.789.790.791.792.793.794.795.796.797.798.799.800.801.802.803.804.805.806.807.808.809.810.811.812.813.814.815.816.817.818.819.820.821.822.823.824.825.826.827.828.829.830.831.832.833.834.835.836.837.838.839.840.841.842.843.844.845.846.847.848.849.850.851.852.853.854.855.856.857.858.859.860.861.862.863.864.865.866.867.868.869.870.871.872.873.874.875.876.877.878.879.880.881.882.883.884.885.886.887.888.889.890.891.892.893.894.895.896.897.898.899.900.901.902.903.904.905.906.907.908.909.910.911.912.913.914.915.916.917.918.919.920.921.922.923.924.925.926.927.928.929.930.931.932.933.934.935.936.937.938.939.940.941.942.943.944.945.946.947.948.949.950.951.952.953.954.955.956.957.958.959.960.961.962.963.964.965.966.967.968.969.970.971.972.973.974.975.976.977.978.979.980.981.982.983.984.985.986.987.988.989.990.991.992.993.994.995.996.997.998.999.1000.

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 14° 35' N   |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 15° 14' N   |        |             |           |              |



from *London* towards *Clary*

| H. | K. | H.K. | Courses.        | Winds.          | Lcc. | Remarks.                |
|----|----|------|-----------------|-----------------|------|-------------------------|
| 1  |    |      | <i>By the</i>   | <i>W. by S.</i> |      | <i>at 10 miles</i>      |
| 2  | 3  |      |                 |                 |      |                         |
| 3  | 3  |      | <i>N. by E.</i> |                 |      | <i>at 10 miles</i>      |
| 4  | 3  |      |                 |                 |      |                         |
| 5  | 3  |      |                 |                 |      | <i>at 10 miles</i>      |
| 6  | 3  |      |                 |                 |      |                         |
| 7  | 0  |      |                 |                 |      |                         |
| 8  | 0  |      |                 |                 |      |                         |
| 9  | 1  | 1    | <i>N. by E.</i> |                 |      | <i>at 10 miles</i>      |
| 10 | 1  | 1    |                 |                 |      |                         |
| 11 | 1  | 1    |                 |                 |      |                         |
| 12 | 2  | 1    |                 |                 |      |                         |
| 1  | 1  |      | <i>N. by E.</i> |                 |      |                         |
| 2  | 1  |      |                 |                 |      |                         |
| 3  | 1  |      |                 |                 |      |                         |
| 4  | "  |      | <i>N. by E.</i> | <i>N. by E.</i> |      | <i>at 10 miles</i>      |
| 5  | "  |      |                 |                 |      |                         |
| 6  | 1  |      |                 |                 |      |                         |
| 7  | 1  |      |                 |                 |      | <i>pleasant weather</i> |
| 8  | 1  |      |                 |                 |      |                         |
| 9  | 1  |      | <i>N. by E.</i> | <i>N. by E.</i> |      |                         |
| 10 | 1  |      |                 |                 |      |                         |
| 11 | 1  |      |                 |                 |      |                         |
| 12 | 1  |      |                 |                 |      |                         |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.   | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|---------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | <i>54° 1'</i> |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lcc. | Remarks.                |
|----|----|------|----------|--------|------|-------------------------|
| 1  |    |      |          |        |      | <i>at 10 miles</i>      |
| 2  |    |      |          |        |      |                         |
| 3  |    |      |          |        |      | <i>pleasant weather</i> |
| 4  |    |      |          |        |      |                         |
| 5  |    |      |          |        |      | <i>at 10 miles</i>      |
| 6  |    |      |          |        |      |                         |
| 7  |    |      |          |        |      | <i>at 10 miles</i>      |
| 8  |    |      |          |        |      |                         |
| 9  |    |      |          |        |      | <i>at 10 miles</i>      |
| 10 |    |      |          |        |      |                         |
| 11 |    |      |          |        |      |                         |
| 12 |    |      |          |        |      |                         |
| 1  |    |      |          |        |      |                         |
| 2  |    |      |          |        |      |                         |
| 3  |    |      |          |        |      | <i>at 10 miles</i>      |
| 4  |    |      |          |        |      |                         |
| 5  |    |      |          |        |      |                         |
| 6  |    |      |          |        |      |                         |
| 7  |    |      |          |        |      | <i>at 10 miles</i>      |
| 8  |    |      |          |        |      |                         |
| 9  |    |      |          |        |      | <i>pleasant weather</i> |
| 10 |    |      |          |        |      |                         |
| 11 |    |      |          |        |      |                         |
| 12 |    |      |          |        |      |                         |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.       | Varia. | Diff. Long. | Long. in. | Long. by Ob.      |
|---------|-------|------------|------|---------------|-------------------|--------|-------------|-----------|-------------------|
|         |       |            |      |               | <i>16° 57' 4"</i> |        |             |           | <i>18° 45' 4"</i> |



*Sept. 14<sup>th</sup> 1845 from [unclear] towards [unclear]*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 2  |       |          |        |      |          |
| 2  | 2  |       |          |        |      |          |
| 3  | 2  |       |          |        |      |          |
| 4  | 2  |       |          |        |      |          |
| 5  | 2  |       |          |        |      |          |
| 6  | 1  |       |          |        |      |          |
| 7  | 2  |       |          |        |      |          |
| 8  | 2  |       |          |        |      |          |
| 9  | 2  |       |          |        |      |          |
| 10 | 4  |       |          |        |      |          |
| 11 | 2  |       |          |        |      |          |
| 12 | 2  |       |          |        |      |          |
| 1  | 2  |       |          |        |      |          |
| 2  | 2  |       |          |        |      |          |
| 3  | 2  |       |          |        |      |          |
| 4  | 2  |       |          |        |      |          |
| 5  | 1  | 1     |          |        |      |          |
| 6  | 2  |       |          |        |      |          |
| 7  | 2  |       |          |        |      |          |
| 8  | 2  |       |          |        |      |          |
| 9  | 2  |       |          |        |      |          |
| 10 | 2  |       |          |        |      |          |
| 11 | 2  |       |          |        |      |          |
| 12 | 2  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 2  | 1     |          |        |      |          |
| 2  | 2  |       |          |        |      |          |
| 3  | 2  |       |          |        |      |          |
| 4  | 2  |       |          |        |      |          |
| 5  | 2  |       |          |        |      |          |
| 6  | 2  | 1     |          |        |      |          |
| 7  | 2  |       |          |        |      |          |
| 8  | 1  | 1     |          |        |      |          |
| 9  | 2  |       |          |        |      |          |
| 10 | 2  |       |          |        |      |          |
| 11 | 2  |       |          |        |      |          |
| 12 | 2  |       |          |        |      |          |
| 1  | 2  |       |          |        |      |          |
| 2  | 2  |       |          |        |      |          |
| 3  | 2  | 1     |          |        |      |          |
| 4  | 2  |       |          |        |      |          |
| 5  | 2  |       |          |        |      |          |
| 6  | 2  |       |          |        |      |          |
| 7  | 2  |       |          |        |      |          |
| 8  | 2  |       |          |        |      |          |
| 9  | 2  |       |          |        |      |          |
| 10 | 3  |       |          |        |      |          |
| 11 | 3  |       |          |        |      |          |
| 12 | 3  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| from                      towards // |       |            |          |               |             |          |             |           |              |
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| H.                                   | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
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| 2                                    | /     |            |          |               |             |          |             |           |              |
| 3                                    | /     |            |          |               |             |          |             |           |              |
| 4                                    | /     |            |          |               |             |          |             |           |              |
| 5                                    | /     |            |          |               |             |          |             |           |              |
| 6                                    | /     |            |          |               |             |          |             |           |              |
| 7                                    | /     |            |          |               |             |          |             |           |              |
| 8                                    | /     |            |          |               |             |          |             |           |              |
| 9                                    | /     |            |          |               |             |          |             |           |              |
| 10                                   | /     |            |          |               |             |          |             |           |              |
| 11                                   | /     |            |          |               |             |          |             |           |              |
| 12                                   | /     |            |          |               |             |          |             |           |              |
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| 3                                    | /     |            |          |               |             |          |             |           |              |
| 4                                    | /     |            |          |               |             |          |             |           |              |
| 5                                    | /     |            |          |               |             |          |             |           |              |
| 6                                    | /     |            |          |               |             |          |             |           |              |
| 7                                    | /     |            |          |               |             |          |             |           |              |
| 8                                    | /     |            |          |               |             |          |             |           |              |
| 9                                    | /     |            |          |               |             |          |             |           |              |
| 10                                   | /     |            |          |               |             |          |             |           |              |
| 11                                   | /     |            |          |               |             |          |             |           |              |
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| Course.                              | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|                                      |       |            |          |               |             |          |             |           |              |

| H.      | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
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| 5       | /     |            |          |               | /           |          |             |           |              |
| 6       | /     |            |          |               | /           |          |             |           |              |
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| 8       | /     |            |          |               | /           |          |             |           |              |
| 9       | /     |            |          |               | /           |          |             |           |              |
| 10      | /     |            |          |               | /           |          |             |           |              |
| 11      | /     |            |          |               | /           |          |             |           |              |
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| 2       | /     |            |          |               | /           |          |             |           |              |
| 3       | /     |            |          |               | /           |          |             |           |              |
| 4       | /     |            |          |               | /           |          |             |           |              |
| 5       | /     |            |          |               | /           |          |             |           |              |
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| 7       | /     |            |          |               | /           |          |             |           |              |
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| 11      | /     |            |          |               | /           |          |             |           |              |
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| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
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from *London* towards *London*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
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| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Co. |
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| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
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| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Co. |
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| from    |       |            |          |               |             | towards  |             |           |              |  |  |
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| H.      | K.    | ILK.       | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |  |  |
| 1       | 3     |            |          |               |             |          |             |           |              |  |  |
| 2       |       |            |          |               |             |          |             |           |              |  |  |
| 3       |       |            |          |               |             |          |             |           |              |  |  |
| 4       | 3     |            |          |               |             |          |             |           |              |  |  |
| 5       | 3     |            |          |               |             |          |             |           |              |  |  |
| 6       | 3     |            |          |               |             |          |             |           |              |  |  |
| 7       | 1     |            |          |               |             |          |             |           |              |  |  |
| 8       | 1     |            |          |               |             |          |             |           |              |  |  |
| 9       |       |            |          |               |             |          |             |           |              |  |  |
| 10      |       |            |          |               |             |          |             |           |              |  |  |
| 11      |       |            |          |               |             |          |             |           |              |  |  |
| 12      |       |            |          |               |             |          |             |           |              |  |  |
| 1       |       |            |          |               |             |          |             |           |              |  |  |
| 2       |       |            |          |               |             |          |             |           |              |  |  |
| 3       |       |            |          |               |             |          |             |           |              |  |  |
| 4       |       |            |          |               |             |          |             |           |              |  |  |
| 5       |       |            |          |               |             |          |             |           |              |  |  |
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| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |  |
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| H.      | K.    | ILK.       | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |  |  |
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| 1       |       |            |          |               |             |          |             |           |              |  |  |
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| 3       | 3     |            |          |               |             |          |             |           |              |  |  |
| 4       | 3     |            |          |               |             |          |             |           |              |  |  |
| 5       | 3     |            |          |               |             |          |             |           |              |  |  |
| 6       | 3     |            |          |               |             |          |             |           |              |  |  |
| 7       | 1     |            |          |               |             |          |             |           |              |  |  |
| 8       | 1     |            |          |               |             |          |             |           |              |  |  |
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| 10      |       |            |          |               |             |          |             |           |              |  |  |
| 11      |       |            |          |               |             |          |             |           |              |  |  |
| 12      |       |            |          |               |             |          |             |           |              |  |  |
| 1       |       |            |          |               |             |          |             |           |              |  |  |
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| 3       |       |            |          |               |             |          |             |           |              |  |  |
| 4       | 3     |            |          |               |             |          |             |           |              |  |  |
| 5       |       |            |          |               |             |          |             |           |              |  |  |
| 6       |       |            |          |               |             |          |             |           |              |  |  |
| 7       |       |            |          |               |             |          |             |           |              |  |  |
| 8       |       |            |          |               |             |          |             |           |              |  |  |
| 9       |       |            |          |               |             |          |             |           |              |  |  |
| 10      |       |            |          |               |             |          |             |           |              |  |  |
| 11      |       |            |          |               |             |          |             |           |              |  |  |
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| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |  |
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from . . . . . towards . . . . .

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
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from

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| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks. |
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| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks. |
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| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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... from *Marine boards* ...

H. K. H. K. Courses. Winds. Lec. Remarks. *Monday 1/11 30<sup>th</sup> 1845*

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| 3  |  |  |  |  |  | <i>... ..</i> |
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| 1  |  |  |  |  |  | <i>... ..</i> |
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H. K. H. K. Courses. Winds. Lec. Remarks. *Tuesday June 7<sup>th</sup> 1845*

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from (A. ) towards S. Bay

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
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| 6  |    |      |          |        |      |          |
| 7  | 2  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 5  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
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| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Vari. | Diff. Long. | Long. in. | Long. by Ob. |
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| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
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| 1  | 5  |      |          |        |      |          |
| 2  | 5  |      |          |        |      |          |
| 3  | 5  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 5  |      |          |        |      |          |
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| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 5  |      |          |        |      |          |
| 11 | 5  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 5  |      |          |        |      |          |
| 6  | 5  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 5  |      |          |        |      |          |
| 11 | 5  |      |          |        |      |          |
| 12 | 5  |      |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Vari. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|-------|-------------|-----------|--------------|
|         |       |            |      |               | 25° 27'     |       |             |           | 1,000 46'    |



Mythia sailing from *London* towards *St. John's*

| H. | K. | H. K. | Courses.           | Winds. | Lee. | Remarks.                         |
|----|----|-------|--------------------|--------|------|----------------------------------|
| 1  | 7  |       | <i>all the way</i> |        |      |                                  |
| 2  | 8  |       |                    |        |      |                                  |
| 3  | 8  |       | <i>all the way</i> |        |      | <i>... with fine weather</i>     |
| 4  | 8  | 1     |                    |        |      | <i>... weather</i>               |
| 5  | 8  | 1     |                    |        |      |                                  |
| 6  | 8  | 1     |                    |        |      |                                  |
| 7  | 8  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 8  | 8  |       |                    |        |      | <i>... a ... standing to</i>     |
| 9  | 8  |       | <i>all the way</i> |        |      | <i>the ...</i>                   |
| 10 | 8  |       |                    |        |      |                                  |
| 11 | 8  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 12 | 8  |       |                    |        |      |                                  |
| 1  | 8  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 2  | 8  | 1     |                    |        |      | <i>... light ship to the ...</i> |
| 3  | 8  | 1     |                    |        |      | <i>... light ship to the ...</i> |
| 4  | 8  | 1     |                    |        |      | <i>... light ship to the ...</i> |
| 5  | 8  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 6  | 8  |       |                    |        |      | <i>... light ship to the ...</i> |
| 7  | 8  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 8  | 8  |       |                    |        |      | <i>... light ship to the ...</i> |
| 9  | 8  |       |                    |        |      | <i>... light ship to the ...</i> |
| 10 | 8  |       |                    |        |      | <i>... light ship to the ...</i> |
| 11 | 8  |       |                    |        |      | <i>... light ship to the ...</i> |
| 12 | 8  |       |                    |        |      | <i>... light ship to the ...</i> |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.    | Varia. | Diff. Long. | Long. in. | Long. by Ob.    |
|----------|-------|------------|------|---------------|----------------|--------|-------------|-----------|-----------------|
|          |       |            |      |               | <i>50° 18'</i> |        |             |           | <i>117° 56'</i> |

| H. | K. | H. K. | Courses.           | Winds. | Lee. | Remarks.                         |
|----|----|-------|--------------------|--------|------|----------------------------------|
| 1  | 4  |       | <i>all the way</i> |        |      |                                  |
| 2  | 4  |       | <i>all the way</i> |        |      | <i>... with moderate ...</i>     |
| 3  | 4  |       |                    |        |      | <i>... fine ...</i>              |
| 4  | 4  |       |                    |        |      |                                  |
| 5  | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 6  | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 7  | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 8  | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 9  | 4  | 1     |                    |        |      | <i>... light ship to the ...</i> |
| 10 | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 11 | 4  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 12 | 4  |       |                    |        |      |                                  |
| 1  | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 2  | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 3  | 4  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 4  | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 5  | 4  | 1     |                    |        |      | <i>... light ship to the ...</i> |
| 6  | 4  | 1     | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 7  | 4  | 1     |                    |        |      | <i>... light ship to the ...</i> |
| 8  | 4  |       |                    |        |      |                                  |
| 9  | 4  |       | <i>all the way</i> |        |      | <i>... light ship to the ...</i> |
| 10 | 4  |       |                    |        |      | <i>... light ship to the ...</i> |
| 11 | 4  |       |                    |        |      |                                  |
| 12 | 4  |       |                    |        |      |                                  |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long. by Ob.    |
|----------|-------|------------|------|---------------|------------------|--------|-------------|-----------|-----------------|
|          |       |            |      |               | <i>22° 56' N</i> |        |             |           | <i>117° 56'</i> |



Ship sailing from *Sandy* towards *Hong Kong*

| H. | K. | H.K. | Courses. | Winds.      | Lee. | Remarks.                              |
|----|----|------|----------|-------------|------|---------------------------------------|
| 1  |    |      | <i>W</i> | <i>East</i> |      | <i>Commenced with a fair pleasant</i> |
| 2  | 2  |      |          |             |      | <i>weather</i>                        |
| 3  | 3  |      |          |             |      |                                       |
| 4  | 3  |      |          |             |      |                                       |
| 5  | 3  |      |          |             |      |                                       |
| 6  | 3  |      | <i>W</i> |             |      | <i>3rd Light in from the East</i>     |
| 7  | 4  |      |          |             |      | <i>and. Still backward</i>            |
| 8  | 4  |      |          |             |      | <i>standing easily</i>                |
| 9  | 5  |      |          |             |      |                                       |
| 10 | 5  |      |          |             |      | <i>5th Beacon at low water</i>        |
| 11 | 4  |      |          |             |      | <i>for Company</i>                    |
| 12 | 5  |      |          |             |      |                                       |
| 1  | 4  |      |          |             |      | <i>Passer a fine 500 ft schooner</i>  |
| 2  | 5  |      |          |             |      | <i>showing English colors</i>         |
| 3  | 5  |      |          |             |      | <i>ing at 4 by the wind</i>           |
| 4  | 6  |      |          |             |      | <i>Still lighter light breeze</i>     |
| 5  | 6  |      |          |             |      | <i>pleasant weather</i>               |
| 6  | 6  |      |          |             |      |                                       |
| 7  | 5  |      |          |             |      |                                       |
| 8  | 4  |      |          |             |      |                                       |
| 9  | 3  |      |          |             |      |                                       |
| 10 | 3  |      |          |             |      |                                       |
| 11 | 2  |      |          |             |      |                                       |
| 12 | 2  |      |          |             |      |                                       |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.   | Varia. | Diff. Long. | Long. in. | Long. by Ob.  |
|----------|-------|------------|------|---------------|---------------|--------|-------------|-----------|---------------|
|          |       |            |      |               | <i>27 1/2</i> |        |             |           | <i>11 1/2</i> |

| H. | K. | H.K. | Courses. | Winds.      | Lee. | Remarks.                           |
|----|----|------|----------|-------------|------|------------------------------------|
| 1  | 2  |      | <i>W</i> | <i>SE</i>   |      | <i>Commenced with light breeze</i> |
| 2  | 3  |      |          |             |      | <i>hot, south weather</i>          |
| 3  | 1  |      | <i>W</i> |             |      |                                    |
| 4  | 2  |      |          |             |      | <i>4th light ship shifted</i>      |
| 5  | 3  |      |          |             |      | <i>now all standing easily</i>     |
| 6  | 3  |      |          |             |      |                                    |
| 7  | 4  |      |          |             |      | <i>5th light ship shifted</i>      |
| 8  | 4  |      |          |             |      | <i>now all standing easily</i>     |
| 9  | 4  |      |          |             |      | <i>6th light ship shifted</i>      |
| 10 | 5  |      |          |             |      | <i>now all standing easily</i>     |
| 11 | 5  |      |          |             |      | <i>7th light ship shifted</i>      |
| 12 | 5  |      |          |             |      | <i>now all standing easily</i>     |
| 1  | 5  |      |          |             |      | <i>8th light ship shifted</i>      |
| 2  | 5  |      |          |             |      | <i>now all standing easily</i>     |
| 3  | 4  |      |          |             |      | <i>9th light ship shifted</i>      |
| 4  | 4  |      |          |             |      | <i>now all standing easily</i>     |
| 5  | 2  |      |          |             |      | <i>10th light ship shifted</i>     |
| 6  | 2  |      |          |             |      | <i>now all standing easily</i>     |
| 7  | 2  |      |          |             |      | <i>11th light ship shifted</i>     |
| 8  | 2  |      |          |             |      | <i>now all standing easily</i>     |
| 9  | 0  |      |          |             |      | <i>12th light ship shifted</i>     |
| 10 | 0  |      |          |             |      | <i>now all standing easily</i>     |
| 11 | 2  |      | <i>W</i> | <i>East</i> |      | <i>1st light ship shifted</i>      |
| 12 | 3  |      |          |             |      | <i>now all standing easily</i>     |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.   | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|---------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | <i>22 1/8</i> |        |             |           |              |



W. L. L. from *London* towards *Long Range*

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |             |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|-------------|
| 1       | 1  | 1     | W. L. L. |            |      |               |             |        |             |           |             |
| 2       | 1  | 1     |          |            |      |               |             |        |             |           |             |
| 3       | 1  | 1     |          |            |      |               |             |        |             |           |             |
| 4       | 2  | 1     | W. L. L. |            |      |               |             |        |             |           |             |
| 5       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 6       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 7       | 2  | 1     | W. L. L. |            |      |               |             |        |             |           |             |
| 8       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 9       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 10      | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 11      | 3  | 1     |          |            |      |               |             |        |             |           |             |
| 12      | 3  | 1     |          |            |      |               |             |        |             |           |             |
| 1       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 2       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 3       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 4       | 2  | 1     |          |            |      |               |             |        |             |           |             |
| 5       | 1  | 1     |          |            |      |               |             |        |             |           |             |
| 6       | 1  | 1     |          |            |      |               |             |        |             |           |             |
| 7       | 1  | 1     |          |            |      |               |             |        |             |           |             |
| 8       | 1  | 1     |          |            |      |               |             |        |             |           |             |
| 9       |    |       |          |            |      |               |             |        |             |           |             |
| 10      |    |       |          |            |      |               |             |        |             |           |             |
| 11      |    |       |          |            |      |               |             |        |             |           |             |
| 12      |    |       |          |            |      |               |             |        |             |           |             |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long by Ob. |
|         |    |       |          |            |      |               | 20° 1'      |        |             |           |             |

| 11. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.   |
|-----|----|-------|----------|--------|------|--|
| 1   | 1  |       | W. L. L. | W.     |      |  |
| 2   | 1  |       |          |        |      |  |
| 3   | 1  |       |          |        |      |  |
| 4   | 1  |       |          |        |      | W. L. L. L.  |
| 5   | 1  |       |          |        |      |  |
| 6   | 1  |       |          |        |      | W. L. L. L.  |
| 7   | 1  |       | W. L. L. |        |      |  |
| 8   | 1  |       |          |        |      | W. L |



Departing from *Amoy* towards *Hong Kong*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



By the line from London, towards London

[illegible]



*from Hong Kong towards Manila*

| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks.                       |
|----|----|------|----------|--------|------|--------------------------------|
| 1  | 1  |      | SE       | SE     |      |                                |
| 2  | 1  |      | SE       | SE     |      |                                |
| 3  | 1  |      | SE       | SE     |      |                                |
| 4  | 1  | 1    |          |        |      |                                |
| 5  | 1  |      |          |        |      |                                |
| 6  | 1  |      |          |        |      |                                |
| 7  | 1  |      |          |        |      |                                |
| 8  | 1  |      |          |        |      |                                |
| 9  | 1  |      |          |        |      |                                |
| 10 | 1  |      |          |        |      |                                |
| 11 | 1  | 1    |          |        |      | Midnight. Moderate pleasant    |
| 12 | 1  | 1    |          |        |      | weather.                       |
| 1  | 1  | 1    |          |        |      |                                |
| 2  | 1  | 1    |          |        |      |                                |
| 3  | 1  | 1    |          |        |      |                                |
| 4  | 1  | 1    |          |        |      |                                |
| 5  | 1  | 1    |          |        |      |                                |
| 6  | 1  | 1    |          |        |      |                                |
| 7  | 1  |      |          |        |      |                                |
| 8  | 1  |      |          |        |      |                                |
| 9  | 1  |      |          |        |      | End with fine breeze, pleasant |
| 10 | 1  |      |          |        |      | weather.                       |
| 11 | 1  |      |          |        |      |                                |
| 12 | 1  |      |          |        |      |                                |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 19° 51' N   |        |             |           | 116° 25' E   |

| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  |      | SE       | SE     |      |          |
| 2  | 1  |      | SE       | SE     |      |          |
| 3  | 1  |      | SE       | SE     |      |          |
| 4  | 1  |      | SE       | SE     |      |          |
| 5  | 1  |      | SE       | SE     |      |          |
| 6  | 1  |      | SE       | SE     |      |          |
| 7  | 1  |      | SE       | SE     |      |          |
| 8  | 1  |      | SE       | SE     |      |          |
| 9  | 1  |      | SE       | SE     |      |          |
| 10 | 1  |      | SE       | SE     |      |          |
| 11 | 1  |      | SE       | SE     |      |          |
| 12 | 1  |      | SE       | SE     |      |          |
| 1  | 1  |      | SE       | SE     |      |          |
| 2  | 1  |      | SE       | SE     |      |          |
| 3  | 1  |      | SE       | SE     |      |          |
| 4  | 1  |      | SE       | SE     |      |          |
| 5  | 1  |      | SE       | SE     |      |          |
| 6  | 1  |      | SE       | SE     |      |          |
| 7  | 1  |      | SE       | SE     |      |          |
| 8  | 1  |      | SE       | SE     |      |          |
| 9  | 1  |      | SE       | SE     |      |          |
| 10 | 1  |      | SE       | SE     |      |          |
| 11 | 1  |      | SE       | SE     |      |          |
| 12 | 1  |      | SE       | SE     |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 7° 53' N    |        |             |           | 117° 11' E   |



Ship *Rebecca* from *Long Key* towards *Ward*

| H.  | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks.                               |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
|---|-------|------------|----------|---------------|-------------|--|-------------|-----------|--------------|------|---------------|-------------|--------|-------------|-----------|--------------|--|--|--|--|--|-----------|--|--|--|------------|
| 1   | 3     | 1          | Light    | SE            |             | Wednesday June 25 <sup>th</sup> 1845 - |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 2   | 3     | 1          |          |               |             | Commenced with light breeze &          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 3   | 3     | 1          |          |               |             | pleasant weather -                     |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 4   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 5   | 3     | 1          |          |               |             | 2.00 spoke the English Breeze          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 6   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 7   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 8   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 9   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 10  | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 11  | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 12  | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 1   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 2   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 3   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 4   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 5   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 6   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 7   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 8   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 9   | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 10  | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 11  | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| 12  | 3     | 1          |          |               |             | at the Key - flying jib -              |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
| <table><tr><td>Course</td><td>Dist.</td><td>Diff. Lat.</td><td>Dep.</td><td>Lat. by D. R.</td><td>Lat. by Ob.</td><td>Varia.</td><td>Diff. Long.</td><td>Long. in.</td><td>Long. by Ob.</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>17° 09' N</td><td></td><td></td><td></td><td>117° 35' E</td></tr></table> |       |            |          |               |             |  | Course      | Dist.     | Diff. Lat.   | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |  |  |  |  |  | 17° 09' N |  |  |  | 117° 35' E |
| Course  | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.                                 | Diff. Long. | Long. in. | Long. by Ob. |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |
|   |       |            |          |               | 17° 09' N   |  |             |           | 117° 35' E   |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |            |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                                      |
|----|----|-------|----------|--------|------|---|
| 1  | 3  | 1     | Light    | SE     |      | Thursday June 26 <sup>th</sup> 1845 -         |
| 2  | 3  | 1     |          |        |      | Commenced with strong breeze & squally        |
| 3  | 3  | 1     |          |        |      | weather -                                     |
| 4  | 3  | 1     |          |        |      | at the Key - flying jib -                     |
| 5  | 3  | 1     |          |        |      | at the Key - flying jib -                     |
| 6  | 3  | 1     |          |        |      | at the Key - flying jib -                     |
| 7  | 3  | 1     | Light    |        |      | 2.30 - - - Heavy squall with rain - Took      |
| 8  | 3  | 1     | Mist     |        |      | in the Topgall sail - hauld up the mainsail - |
| 9  | 3  | 1     |          |        |      | at the Key - flying jib -                     |
| 10 | 3  | 1     | Light    |        |      | at the Key - flying jib -                     |
| 11 | 3  | 1     | Light    |        |      | at the Key - flying jib -                     |
| 12 | 3  | 1     | Light    |        |      | at the Key - flying jib -                     |
| 1  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 2  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 3  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 4  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 5  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 6  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 7  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 8  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 9  | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 10 | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 11 | 4  | 1     |          |        |      | at the Key - flying jib -                     |
| 12 | 4  | 1     |          |        |      | at the Key - flying jib -                     |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long by Ob. |
|---------|-------|------------|------|--------------|-------------|--------|-------------|-----------|-------------|
|         |       |            |      |              | 17° 05' N   |        |             |           | 117° 31' E  |



*From Hong Kong towards America*

| H. | K. | ILK. | Courses. | Winds. | Lee. | Remarks.                              |
|----|----|------|----------|--------|------|---------------------------------------|
| 1  | 3  | 1    | W        | W      |      | Commenced with fresh gales & squalls  |
| 2  | 3  | 1    |          |        |      |                                       |
| 3  | 3  | 1    |          |        |      |                                       |
| 4  | 3  | 1    |          |        |      |                                       |
| 5  | 3  | 1    |          |        |      |                                       |
| 6  | 4  |      |          |        |      | 1 P.M. Set the Mainsail               |
| 7  | 4  |      |          |        |      | Midnight - Strong gales with squalls  |
| 8  | 4  |      |          |        |      |                                       |
| 9  | 4  |      |          |        |      | 4 P.M. Set the Fore-sail              |
| 10 | 4  |      |          |        |      |                                       |
| 11 | 4  |      |          |        |      | 5 P.M. Took in part of the            |
| 12 | 4  |      |          |        |      | Fore-sail                             |
| 1  | 4  |      |          |        |      | 8 P.M. Took ship to the               |
| 2  | 4  |      |          |        |      | Northward in fog                      |
| 3  | 4  |      |          |        |      |                                       |
| 4  | 4  |      |          |        |      | Commenced with strong gales & squalls |
| 5  | 4  |      |          |        |      |                                       |
| 6  | 4  |      |          |        |      |                                       |
| 7  | 4  |      |          |        |      |                                       |
| 8  | 4  |      |          |        |      |                                       |
| 9  | 4  |      |          |        |      |                                       |
| 10 | 3  |      |          |        |      |                                       |
| 11 | 3  |      |          |        |      |                                       |
| 12 | 3  |      |          |        |      |                                       |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 16° 56' N   |        |             |           | 119° 56' E   |

| H. | K. | ILK. | Courses. | Winds. | Lee. | Remarks.   |
|----|----|------|----------|--------|------|--|
| 1  | 3  |      | W        | W      | 2    | Commenced with strong gales & heavy squalls from the Northward |
| 2  | 3  |      |          |        |      |  |
| 3  | 3  |      |          |        |      |  |
| 4  | 3  |      |          |        |      |  |
| 5  | 3  |      |          |        |      | 1 P.M. Set the Fore-sail                                       |
| 6  | 3  |      |          |        |      |  |
| 7  | 3  |      |          |        |      | 1.30 Took in part of the Fore-sail                             |
| 8  | 3  |      |          |        |      | the Mainsail   |
| 9  | 3  |      |          |        |      |  |
| 10 | 3  |      |          |        |      | 4 P.M. Took in Mainsail & sent down Key                        |
| 11 | 3  |      |          |        |      | at Tacks, Ship rolling heavily                                 |
| 12 | 3  |      |          |        |      | Midnight - Strong gales & passing squalls                      |
| 1  | 3  |      |          |        |      | Observed the Fore-sail, & set & furled the Mainsail            |
| 2  | 3  |      |          |        |      |  |
| 3  | 3  |      |          |        |      | 11 A.M. Set & reefed Fore-sail & took in the Mainsail          |
| 4  | 3  |      |          |        |      |  |
| 5  | 3  |      |          |        |      |  |
| 6  | 3  |      |          |        |      |  |
| 7  | 3  |      |          |        |      |  |
| 8  | 3  |      |          |        |      |  |
| 9  | 3  |      |          |        |      |  |
| 10 | 3  |      |          |        |      |  |
| 11 | 3  |      |          |        |      |  |
| 12 | 3  |      |          |        |      | Ends with strong gales & passing clouds                        |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 16° 26' N   |        |             |           |              |



Ship the sailing from Hong Kong towards Manila

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.   |
|----|----|-------|----------|--------|------|--|
| 1  | 3  |       | 187 8    | 16 1/2 |      | commenced with strong gale & fog   |
| 2  | 3  |       |          |        |      | ding equally   |
| 3  | 4  |       |          |        |      |  |
| 4  | 4  |       |          |        |      |  |
| 5  | 5  |       | SE       |        |      | 11.4 AM. Took out line and 1/2 p.  |
| 6  | 5  |       |          |        |      | sailed, set 1st, 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th        |
| 7  | 5  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 8  | 5  | 1     | 187 8    | 16 1/2 |      | 6. AM. Took out line and 1/2 p.  |
| 9  | 5  | 1     |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 10 | 5  | 1     |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 11 | 5  | 1     |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 12 | 5  | 1     |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 1  | 6  |       | 187 8    | 16 1/2 |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 2  | 6  |       |          |        |      | Midnight. Strong breeze & pleasant   |
| 3  | 5  |       |          |        |      | 1.4 PM. Took out line and 1/2 p.   |
| 4  | 6  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 5  | 5  |       | SE       |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 6  | 5  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 7  | 6  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 8  | 6  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 9  | 5  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 10 | 5  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 11 | 5  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 12 | 5  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 15° 54' N   |        |             |           | 119° 01' E   |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.   |
|----|----|-------|----------|--------|------|--|
| 1  | 3  | 1     | 187 8    | 16 1/2 |      | commenced with fresh breeze &  |
| 2  | 3  | 1     |          |        |      | pleasant weather   |
| 3  | 5  |       |          |        |      | 1.4 PM. Made land to land  |
| 4  | 5  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 5  | 5  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 6  | 4  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 7  | 4  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 8  | 4  |       | 187 8    | 16 1/2 |      | Midnight. Light breeze & pleasant  |
| 9  | 4  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 10 | 3  | 1     |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 11 | 3  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 12 | 2  |       | 187 8    | 16 1/2 |      | 6. AM. Took out line and 1/2 p.  |
| 1  | 2  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 2  | 2  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 3  | 2  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 4  | 2  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 5  | 2  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 6  | 3  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 7  | 3  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 8  | 3  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 9  | 3  |       | Variable |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 10 | 2  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |
| 11 | 1  |       |          |        |      | 1.4 PM. Boat took 1st & 2nd & 3rd & 4th & 5th & 6th & 7th & 8th & 9th & 10th & 11th & 12th |
| 12 | 1  |       |          |        |      | 6. AM. Took out line and 1/2 p.  |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 15° 41' N   |        |             |           | 119° 12' E   |



*Ship from New York towards New Orleans*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 2  |      | SE       | SE     |      |          |
| 2  | 3  |      |          |        |      |          |
| 3  | 3  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  | 2  | 1    |          |        |      |          |
| 6  | 2  | 1    |          |        |      |          |
| 7  | 2  | 1    |          |        |      |          |
| 8  | 2  | 1    |          |        |      |          |
| 9  | 2  |      | SE       |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  | 1    |          |        |      |          |
| 1  | 1  | 1    |          |        |      |          |
| 2  | 1  | 1    |          |        |      |          |
| 3  | 1  | 1    |          |        |      |          |
| 4  | 1  | 1    | SE       | SE     |      |          |
| 5  | 1  | 1    |          |        |      |          |
| 6  | 1  | 1    |          |        |      |          |
| 7  | 1  | 1    |          |        |      |          |
| 8  | 1  | 1    |          |        |      |          |
| 9  | 1  | 1    |          |        |      |          |
| 10 | 1  | 1    |          |        |      |          |
| 11 | 1  | 1    |          |        |      |          |
| 12 | 1  | 1    |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | SE          |        |             |           | SE           |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 2  |      | SE       | SE     |      |          |
| 2  | 3  |      |          |        |      |          |
| 3  | 3  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  | 2  | 1    |          |        |      |          |
| 6  | 2  | 1    |          |        |      |          |
| 7  | 2  | 1    | SE       |        |      |          |
| 8  | 2  | 1    |          |        |      |          |
| 9  | 2  | 1    | SE       |        |      |          |
| 10 | 1  | 1    | SE       |        |      |          |
| 11 | 1  | 1    |          |        |      |          |
| 12 | 1  | 1    |          |        |      |          |
| 1  | 1  | 1    |          |        |      |          |
| 2  | 1  | 1    |          |        |      |          |
| 3  | 1  | 1    |          |        |      |          |
| 4  | 1  | 1    | SE       |        |      |          |
| 5  | 1  | 1    |          |        |      |          |
| 6  | 1  | 1    |          |        |      |          |
| 7  | 1  | 1    | SE       |        |      |          |
| 8  | 1  | 1    |          |        |      |          |
| 9  | 1  | 1    |          |        |      |          |
| 10 | 1  | 1    |          |        |      |          |
| 11 | 1  | 1    |          |        |      |          |
| 12 | 1  | 1    |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.                    |
|----|----|-------|----------|--------|------|-----------------------------|
|    |    |       |          |        |      | Monday 1 <sup>st</sup> Oct. |

| H. | K. | H. K. | Courses. | Winds. | Lce. | Remarks.                           |
|----|----|-------|----------|--------|------|------------------------------------|
|    |    |       |          |        |      | S. by E. July 1 <sup>st</sup> 1875 |

Manufactured and sold by JOHN P. JEWETT, 193 Essex Street, Salem, Mass.



from *Hamden* towards *Providence*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.  |
|----|----|------|----------|--------|------|---|
| 1  |    |      |          |        |      | Commenced with light wind & passing             |
| 2  |    |      |          |        |      | under way -                                     |
| 3  |    |      |          |        |      |   |
| 4  |    |      |          |        |      |   |
| 5  |    |      |          |        |      | At 10 o'clock came on board. Fine               |
| 6  |    |      |          |        |      | weather. Received the customary visit -         |
| 7  |    |      |          |        |      |   |
| 8  |    |      |          |        |      |   |
| 9  |    |      |          |        |      | At 12 o'clock 6.30. Calm - time to              |
| 10 |    |      |          |        |      | be down with 45 fathoms rope & laid the cable - |
| 11 |    |      |          |        |      | At 1 o'clock the light was clearly              |
| 12 |    |      |          |        |      | seen -  |
| 1  |    |      |          |        |      |   |
| 2  |    |      |          |        |      |   |
| 3  |    |      |          |        |      |   |
| 4  |    |      |          |        |      |   |
| 5  |    |      |          |        |      | At 2 o'clock came on board. It                  |
| 6  |    |      |          | SE     |      | was too high to be used for the                 |
| 7  |    |      |          |        |      |   |
| 8  |    |      |          |        |      |   |
| 9  |    |      |          | SE     |      | Kept in company with ship until for             |
| 10 |    |      |          |        |      | Boston Jan 6. At 1 o'clock                      |
| 11 |    |      |          |        |      | At 1 o'clock left for SE. Under way             |
| 12 |    |      |          |        |      |   |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.  |
|----|----|------|----------|--------|------|---|
| 1  |    |      |          | SE     |      | Commenced with light wind & passing             |
| 2  |    |      |          |        |      | under way -                                     |
| 3  |    |      |          |        |      |   |
| 4  |    |      |          |        |      |   |
| 5  |    |      |          |        |      | At 1 o'clock came on board. Fine                |
| 6  |    |      |          |        |      | weather. Received the customary visit -         |
| 7  |    |      |          |        |      |   |
| 8  |    |      |          |        |      |   |
| 9  |    |      |          |        |      | At 12 o'clock 6.30. Calm - time to              |
| 10 |    |      |          |        |      | be down with 45 fathoms rope & laid the cable - |
| 11 |    |      |          |        |      | At 1 o'clock the light was clearly              |
| 12 |    |      |          |        |      | seen -  |
| 1  |    |      |          |        |      |   |
| 2  |    |      |          |        |      |   |
| 3  |    |      |          |        |      |   |
| 4  |    |      |          |        |      |   |
| 5  |    |      |          |        |      | At 2 o'clock came on board. It                  |
| 6  |    |      |          |        |      | was too high to be used for the                 |
| 7  |    |      |          |        |      |   |
| 8  |    |      |          |        |      |   |
| 9  |    |      |          |        |      | Kept in company with ship until for             |
| 10 |    |      |          |        |      | Boston Jan 6. At 1 o'clock                      |
| 11 |    |      |          |        |      | At 1 o'clock left for SE. Under way             |
| 12 |    |      |          |        |      |   |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



*Ship sailing from New York towards New York*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



from  $\frac{1}{2}$  inch towards  $\frac{1}{4}$  inch

[illegible]

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 112 57      |        |             |           |              |

| II. | R. | H.K. | Courses. | Winds. | Lce. | Remarks.                         |
|-----|----|------|----------|--------|------|----------------------------------|
| 1   | /  | /    | 1st      | SE     |      | 1st day of August 18th, 1880     |
| 2   | /  | /    |          |        |      | 2nd day of August 19th, 1880     |
| 3   | /  | /    |          |        |      | 3rd day of August 20th, 1880     |
| 4   | /  | /    |          |        |      | 4th day of August 21st, 1880     |
| 5   | /  | /    |          |        |      | 5th day of August 22nd, 1880     |
| 6   | /  | /    |          |        |      | 6th day of August 23rd, 1880     |
| 7   | /  | /    |          |        |      | 7th day of August 24th, 1880     |
| 8   | /  | /    |          |        |      | 8th day of August 25th, 1880     |
| 9   | /  | /    |          |        |      | 9th day of August 26th, 1880     |
| 10  | /  | /    |          |        |      | 10th day of August 27th, 1880    |
| 11  | /  | /    | 1st      | SE     |      | 11th day of August 28th, 1880    |
| 12  | 2  | /    | 2nd      | SE     |      | 12th day of August 29th, 1880    |
| 1   | /  | /    | 3rd      | SE     |      | 1st day of September 1st, 1880   |
| 2   | /  | /    |          |        |      | 2nd day of September 2nd, 1880   |
| 3   | /  | /    |          |        |      | 3rd day of September 3rd, 1880   |
| 4   | 2  | /    |          |        |      | 4th day of September 4th, 1880   |
| 5   |    | /    |          |        |      | 5th day of September 5th, 1880   |
| 6   |    | /    |          |        |      | 6th day of September 6th, 1880   |
| 7   | 1  | 1    | 1st      | East   |      | 7th day of September 7th, 1880   |
| 8   | 2  | /    |          |        |      | 8th day of September 8th, 1880   |
| 9   | 3  | /    |          |        |      | 9th day of September 9th, 1880   |
| 10  | 3  | /    | 1st      |        |      | 10th day of September 10th, 1880 |
| 11  | 3  | /    |          |        |      | 11th day of September 11th, 1880 |
| 12  | 4  | /    |          |        |      | 12th day of September 12th, 1880 |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 14° 40' 31" |        |             |           |              |



Ship *the Fish* from *Haver* towards *For*

| H. | K. | H. K. | Courses.    | Winds.    | Lee. | Remarks.                         |
|----|----|-------|-------------|-----------|------|----------------------------------|
| 1  | 3  |       | <i>1.14</i> | <i>SE</i> |      | <i>11.00</i> <i>light breeze</i> |
| 2  | 3  |       |             |           |      |                                  |
| 3  | 4  |       | <i>1.14</i> | <i>SE</i> |      | <i>11.00</i> <i>light breeze</i> |
| 4  | 4  |       |             |           |      |                                  |
| 5  | 4  |       |             |           |      | <i>4.00</i> <i>light breeze</i>  |
| 6  | 4  |       |             |           |      |                                  |
| 7  | 3  |       |             |           |      |                                  |
| 8  | 3  |       |             |           |      |                                  |
| 9  | 2  |       |             |           |      | <i>11.00</i> <i>light breeze</i> |
| 10 | 2  |       |             |           |      |                                  |
| 11 |    |       | <i>1.14</i> | <i>SE</i> |      | <i>11.00</i> <i>light breeze</i> |
| 12 | 2  |       |             |           |      |                                  |
| 1  | 3  |       | <i>1.14</i> | <i>SE</i> |      | <i>11.00</i> <i>light breeze</i> |
| 2  | 4  |       |             |           |      |                                  |
| 3  | 4  |       |             |           |      |                                  |
| 4  | 3  |       |             |           |      |                                  |
| 5  | 2  |       |             |           |      |                                  |
| 6  | 2  |       |             |           |      |                                  |
| 7  | 2  |       |             |           |      |                                  |
| 8  | 1  |       |             |           |      |                                  |
| 9  |    |       |             |           |      |                                  |
| 10 |    |       |             |           |      |                                  |
| 11 |    |       |             |           |      |                                  |
| 12 |    |       |             |           |      |                                  |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long by Ob.       |
|---------|-------|------------|------|---------------|------------------|--------|-------------|-----------|-------------------|
|         |       |            |      |               | <i>13° 46' N</i> |        |             |           | <i>117° 46' E</i> |

| H. | K. | H. K. | Courses.    | Winds.    | Lee. | Remarks.                         |
|----|----|-------|-------------|-----------|------|----------------------------------|
| 1  | 2  | 1     | <i>1.14</i> | <i>SE</i> |      | <i>11.00</i> <i>light breeze</i> |
| 2  | 3  |       |             |           |      |                                  |
| 3  | 3  |       |             |           |      |                                  |
| 4  | 2  |       |             |           |      |                                  |
| 5  | 3  |       |             |           |      |                                  |
| 6  | 4  |       | <i>1.14</i> | <i>SE</i> |      | <i>11.00</i> <i>light breeze</i> |
| 7  | 4  |       |             |           |      |                                  |
| 8  | 4  |       |             |           |      |                                  |
| 9  | 4  |       |             |           |      |                                  |
| 10 | 3  |       |             |           |      |                                  |
| 11 | 3  |       |             |           |      |                                  |
| 12 | 3  |       |             |           |      |                                  |
| 1  | 4  | 1     |             |           |      | <i>5.00</i> <i>light breeze</i>  |
| 2  | 4  |       |             |           |      |                                  |
| 3  | 4  |       |             |           |      |                                  |
| 4  | 3  |       |             |           |      |                                  |
| 5  | 3  |       |             |           |      |                                  |
| 6  | 3  |       |             |           |      |                                  |
| 7  | 3  |       |             |           |      |                                  |
| 8  | 3  |       |             |           |      |                                  |
| 9  | 3  |       |             |           |      |                                  |
| 10 | 3  | 1     |             |           |      |                                  |
| 11 | 3  | 1     |             |           |      |                                  |
| 12 | 3  | 1     |             |           |      |                                  |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long by Ob. |
|---------|-------|------------|------|---------------|------------------|--------|-------------|-----------|-------------|
|         |       |            |      |               | <i>13° 46' N</i> |        |             |           |             |



Left the harbor from *Martha's Vineyard* towards *St. John's* for -

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.  |
|----|----|------|----------|--------|------|---|
| 1  | 4  |      | 1/4 N    | SE     |      |   |
| 2  | 4  |      |          | 1/4 N  |      |   |
| 3  | 4  |      |          |        |      | Commenced with light breeze 'pleasant weather - |
| 4  | 4  |      |          |        |      |   |
| 5  | 3  |      |          |        |      |   |
| 6  | 3  |      |          |        |      | 2 P.M. - Jibed ship 'stiffened and              |
| 7  | 2  | 1    |          |        |      | densely -                                       |
| 8  | 2  | 1    |          |        |      |   |
| 9  | 2  |      |          |        |      |   |
| 10 | 1  |      |          |        |      |   |
| 11 | 1  |      |          |        |      | Midnight - Light breeze 'pleasant               |
| 12 | 2  |      |          | SE     |      | weather -                                       |
| 1  | 2  |      |          | SE     |      |   |
| 2  | 2  |      |          |        |      | 10 P.M. - Wind veered to SE.                    |
| 3  | 2  |      |          |        |      |   |
| 4  | 3  |      |          |        |      | in jibed ship 'stiffened and densely -          |
| 5  | 3  |      |          |        |      |   |
| 6  | 3  |      |          |        |      | 11 P.M. - Jibed ship 'stiffened and             |
| 7  | 3  |      |          |        |      | densely -                                       |
| 8  | 3  |      |          |        |      |   |
| 9  |    |      |          |        |      | Ends with calm & hot, sultry weather -          |
| 10 |    |      |          |        |      |   |
| 11 |    |      |          |        |      |   |
| 12 |    |      |          |        |      |   |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 17° 10' N   |        |             |           | 117° 28' E   |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                                  |
|----|----|------|----------|--------|------|---|
| 1  | 2  |      | 1/4 N    | SE     |      |   |
| 2  | 2  |      |          |        |      | Commenced with light breeze from the      |
| 3  | 2  |      |          |        |      | SE & hot, sultry weather -                |
| 4  | 2  |      |          |        |      |   |
| 5  | 2  |      |          |        |      | 8 P.M. - Took in Lower studdensail -      |
| 6  | 2  |      |          |        |      |   |
| 7  | 2  |      |          |        |      | 9.30 P.M. - In all studdensails & braced  |
| 8  | 2  |      |          |        |      | up the yards -                            |
| 9  | 2  |      |          |        |      |   |
| 10 | 2  |      | 1/2 N    | SE     |      | 11 P.M. - Tacked ship to NW               |
| 11 | 2  |      | 1/2 N    | SE     |      |   |
| 12 | 2  |      | 1/2 N    | SE     |      | Midnight - Light breeze 'pleasant         |
| 1  | 2  |      |          |        |      | sail weather -                            |
| 2  | 2  |      |          |        |      |   |
| 3  | 2  |      |          |        |      |   |
| 4  | 2  |      |          |        |      | 6 P.M. - Braced round the yards -         |
| 5  | 2  |      |          |        |      |   |
| 6  | 2  |      |          |        |      | 11 P.M. - Set all Larboard studdensails - |
| 7  | 2  |      |          |        |      |   |
| 8  | 2  |      |          |        |      | Ends with moderate breeze 'pleasant       |
| 9  | 2  |      |          |        |      | weather -                                 |
| 10 | 3  |      |          |        |      |   |
| 11 | 3  |      |          |        |      |   |
| 12 | 3  |      |          |        |      |   |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 18° 30' N   |        |             |           | 117° 44' E   |



Ship the *Thetis* from *Nauvoo* towards *San Francisco*

| H. | K. | H. K. | Courses.    | Winds.   | Lee. | Remarks.  |
|----|----|-------|-------------|----------|------|---|
| 1  | 5  |       | <i>W</i>    | <i>W</i> |      |   |
| 2  | 5  |       |             |          |      | Commenced with good breeze & squally appearance - |
| 3  | 5  |       |             |          |      |   |
| 4  | 5  |       |             |          |      |   |
| 5  | 5  |       |             |          |      |   |
| 6  | 5  |       |             |          |      | Taken in foremast studdensails & set              |
| 7  | 5  |       |             |          |      |   |
| 8  | 5  |       |             |          |      | a squall passed set them again -                  |
| 9  | 4  | 1     |             |          |      |   |
| 10 | 4  | 1     |             |          |      | 3 P.M. - Taken in all studdensails. Wind blew     |
| 11 | 4  |       |             |          |      |   |
| 12 | 4  |       |             |          |      | 9.00. - Tacked ship to S.W.                       |
| 1  | 3  |       | <i>S.W.</i> |          |      |   |
| 2  | 4  |       |             |          |      | Midnight - Moderate & pleasant -                  |
| 3  | 4  |       |             |          |      |   |
| 4  | 4  |       |             |          |      | 3 P.M. - Squall from the East -                   |
| 5  | 3  | 1     | <i>S.W.</i> |          |      | set them again -                                  |
| 6  | 2  | 1     |             |          |      | Taken in Main Royal & Flying jib -                |
| 7  | 3  |       |             |          |      |   |
| 8  | 2  |       |             |          |      | 5.00. - Set them again -                          |
| 9  | 1  | 1     | <i>S.W.</i> |          |      |   |
| 10 | 1  | 1     |             |          |      | 6.00. - Set them again -                          |
| 11 | 1  | 1     |             |          |      |   |
| 12 | 1  | 1     |             |          |      | Set them again -                                  |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|--------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |              | 102° 15'    |        |             |           | 118° East    |

| H. | K. | H. K. | Courses.    | Winds.        | Lee. | Remarks.   |
|----|----|-------|-------------|---------------|------|--|
| 1  | 2  |       | <i>S.W.</i> | <i>S.W.</i>   |      |  |
| 2  | 3  |       |             |               |      | Commenced with light breeze & squally appearance - |
| 3  | 6  |       |             |               |      |  |
| 4  | 5  |       |             |               |      |  |
| 5  | 2  |       |             |               |      | 3 P.M. - Squall from the Eastward -                |
| 6  | 1  |       |             |               |      | Taken in Main Royal, Flying jib & Main             |
| 7  | 1  |       |             |               |      | topgallant sail -                                  |
| 8  | 2  |       | <i>East</i> |               |      |  |
| 9  | 2  | 1     | <i>East</i> | <i>E.S.E.</i> |      | 4.00. - Set them again - Also set Fore             |
| 10 | 2  | 1     |             |               |      | topmast & Main topgallant studdensails -           |
| 11 | 2  | 1     |             |               |      |  |
| 12 | 2  | 1     | <i>S.W.</i> | <i>East</i>   |      | 5.00. - In studdensails -                          |
| 1  | 4  | 1     |             |               |      | 9 P.M. - Light breeze from S. - Tacked ship -      |
| 2  | 4  | 1     |             |               |      | 8 P.M. - Set Foremast studdensails -               |
| 3  | 4  | 1     |             |               |      | 11.00. - Squall from the Eastward -                |
| 4  | 4  | 1     |             |               |      | Taken in Main Royal & Flying jib -                 |
| 5  | 5  |       |             |               |      |  |
| 6  | 5  |       |             |               |      |  |
| 7  | 5  |       |             |               |      |  |
| 8  | 5  |       |             |               |      |  |
| 9  | 5  |       |             |               |      |  |
| 10 | 6  |       |             |               |      |  |
| 11 | 6  |       |             |               |      |  |
| 12 | 6  |       |             |               |      |  |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|--------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |              | 100° 15'    |        |             |           | 118° East    |



from *London* towards *London*

| H. | K. | U.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  |      |          |        |      |          |
| 2  | 4  |      |          |        |      |          |
| 3  | 5  |      |          |        |      |          |
| 4  | 4  |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  | 5  |      |          |        |      |          |
| 9  | 5  |      |          |        |      |          |
| 10 | 5  |      |          |        |      |          |
| 11 | 4  | 1    |          |        |      |          |
| 12 | 4  | 1    |          |        |      |          |
| 1  | 5  |      |          |        |      |          |
| 2  | 5  |      |          |        |      |          |
| 3  | 5  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 4  | 1    |          |        |      |          |
| 6  | 5  |      |          |        |      |          |
| 7  | 5  |      |          |        |      |          |
| 8  | 5  |      |          |        |      |          |
| 9  | 5  |      |          |        |      |          |
| 10 | 5  |      |          |        |      |          |
| 11 | 4  |      |          |        |      |          |
| 12 | 4  |      |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by O. C. | Varia. | Diff. Long. | Long. in. | Long. by O. C. |
|----------|-------|------------|------|---------------|---------------|--------|-------------|-----------|----------------|
|          |       |            |      |               | 15° 1'        |        |             |           |                |

| H. | K. | U.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 2  |      |          |        |      |          |
| 2  | 2  |      |          |        |      |          |
| 3  | 2  |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  | 1  | 1    | N by E   | East   |      |          |
| 8  | 1  | 1    |          |        |      |          |
| 9  | 2  |      |          |        |      |          |
| 10 | 2  |      |          |        |      |          |
| 11 | 2  |      |          |        |      |          |
| 12 | 4  | 1    |          |        |      |          |
| 1  | 4  |      |          |        |      |          |
| 2  | 2  |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  | 2  |      | N by E   | N by W |      |          |
| 6  | 3  |      |          |        |      |          |
| 7  | 2  |      | North    | East   |      |          |
| 8  | 3  |      |          |        |      |          |
| 9  | 2  |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by O. C. | Varia. | Diff. Long. | Long. in. | Long. by O. C. |
|----------|-------|------------|------|---------------|---------------|--------|-------------|-----------|----------------|
|          |       |            |      |               | 22° 44'       |        |             |           | 118° 41'       |



| Sailing from <i>London</i> towards <i>London</i> |    |       |                        |                 |      |               |                |        |             |           |                |
|--|----|-------|------------------------|-----------------|------|---------------|----------------|--------|-------------|-----------|----------------|
| H.   | K. | H. K. | Courses.               | Winds.          | Lee. | Remarks.      |                |        |             |           |                |
| 1  |    |       |                        |                 |      |               |                |        |             |           |                |
| 2  |    |       |                        |                 |      |               |                |        |             |           |                |
| 3  |    |       |                        |                 |      |               |                |        |             |           |                |
| 4  |    |       |                        |                 |      |               |                |        |             |           |                |
| 5  |    |       |                        |                 |      |               |                |        |             |           |                |
| 6  |    |       |                        |                 |      |               |                |        |             |           |                |
| 7  | 2  |       | <i>N. by E. 1/2 E.</i> | <i>N. by E.</i> |      |               |                |        |             |           |                |
| 8  | 2  |       |                        |                 |      |               |                |        |             |           |                |
| 9  | 1  | 1     |                        |                 |      |               |                |        |             |           |                |
| 10   |    |       |                        |                 |      |               |                |        |             |           |                |
| 11   |    |       |                        |                 |      |               |                |        |             |           |                |
| 12   |    |       |                        |                 |      |               |                |        |             |           |                |
| 1  |    |       |                        |                 |      |               |                |        |             |           |                |
| 2  |    |       |                        |                 |      |               |                |        |             |           |                |
| 3  |    |       |                        |                 |      |               |                |        |             |           |                |
| 4  |    |       |                        |                 |      |               |                |        |             |           |                |
| 5  | 2  |       | <i>N. by E.</i>        |                 |      |               |                |        |             |           |                |
| 6  | 2  |       |                        |                 |      |               |                |        |             |           |                |
| 7  | 2  |       |                        |                 |      |               |                |        |             |           |                |
| 8  | 2  |       | <i>N. by E.</i>        |                 |      |               |                |        |             |           |                |
| 9  | 2  |       |                        |                 |      |               |                |        |             |           |                |
| 10   | 2  |       | <i>N. by E. 1/2 E.</i> |                 |      |               |                |        |             |           |                |
| 11   | 2  |       |                        |                 |      |               |                |        |             |           |                |
| 12   | 2  |       |                        |                 |      |               |                |        |             |           |                |
|  |    |       | Dist.                  | Diff. lat.      | Dep. | Lat. by D. R. | Lat. by Ob.    | Varia. | Diff. Long. | Long. in. | Long. by Ob.   |
|  |    |       |                        |                 |      |               | <i>104 1/2</i> |        |             |           | <i>104 1/2</i> |

| H. | K. | H. K. | Courses.               | Winds.          | Lee. | Remarks.      |                |        |             |           |                |
|----|----|-------|------------------------|-----------------|------|---------------|----------------|--------|-------------|-----------|----------------|
| 1  |    |       |                        |                 |      |               |                |        |             |           |                |
| 2  |    |       |                        |                 |      |               |                |        |             |           |                |
| 3  |    |       |                        |                 |      |               |                |        |             |           |                |
| 4  | 3  | 1     |                        |                 |      |               |                |        |             |           |                |
| 5  | 4  | 1     |                        |                 |      |               |                |        |             |           |                |
| 6  | 4  |       |                        |                 |      |               |                |        |             |           |                |
| 7  | 4  |       | <i>N. by E.</i>        |                 |      |               |                |        |             |           |                |
| 8  | 3  | 1     |                        |                 |      |               |                |        |             |           |                |
| 9  | 3  | 1     | <i>N. by E.</i>        | <i>E. by N.</i> |      |               |                |        |             |           |                |
| 10 | 3  | 1     |                        |                 |      |               |                |        |             |           |                |
| 11 | 3  |       |                        |                 |      |               |                |        |             |           |                |
| 12 | 2  |       |                        |                 |      |               |                |        |             |           |                |
| 1  | 3  |       | <i>N. by E.</i>        | <i>N. by E.</i> |      |               |                |        |             |           |                |
| 2  | 3  |       |                        |                 |      |               |                |        |             |           |                |
| 3  | 3  |       | <i>N. by E. 1/2 E.</i> |                 |      |               |                |        |             |           |                |
| 4  | 3  |       |                        |                 |      |               |                |        |             |           |                |
| 5  | 3  |       | <i>N. by E. 1/2 E.</i> |                 |      |               |                |        |             |           |                |
| 6  | 3  |       |                        |                 |      |               |                |        |             |           |                |
| 7  | 3  |       | <i>N. by E.</i>        |                 |      |               |                |        |             |           |                |
| 8  | 3  |       |                        |                 |      |               |                |        |             |           |                |
| 9  | 4  | 1     |                        |                 |      |               |                |        |             |           |                |
| 10 | 4  | 1     |                        |                 |      |               |                |        |             |           |                |
| 11 | 3  | 1     |                        |                 |      |               |                |        |             |           |                |
| 12 | 2  | 1     |                        |                 |      |               |                |        |             |           |                |
|    |    |       | Dist.                  | Diff. lat.      | Dep. | Lat. by D. R. | Lat. by Ob.    | Varia. | Diff. Long. | Long. in. | Long. by Ob.   |
|    |    |       |                        |                 |      |               | <i>104 1/2</i> |        |             |           | <i>104 1/2</i> |



from *London* towards *St. John's*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.  |
|----|----|------|----------|--------|------|-----------|
| 1  | 3  |      | North    | East   |      | ...       |
| 2  | 1  |      |          |        |      | ...       |
| 3  | 4  |      |          |        |      | ...       |
| 4  | 4  |      | North    |        |      | ...       |
| 5  | 3  |      |          |        |      | ...       |
| 6  | 1  |      |          |        |      | ...       |
| 7  | 1  | 1    | North    |        |      | 2 m. ...  |
| 8  | 3  | 1    |          |        |      | ...       |
| 9  | 4  |      | North    |        |      | ...       |
| 10 | 4  |      |          |        |      | ...       |
| 11 | 3  | 1    |          |        |      | ...       |
| 12 | 1  | 1    |          |        |      | ...       |
| 1  | 2  | 1    | North    |        |      | ...       |
| 2  | 2  | 1    |          |        |      | ...       |
| 3  | 3  |      |          |        |      | ...       |
| 4  | 3  |      |          |        |      | ...       |
| 5  | 3  | 1    | North    |        |      | ...       |
| 6  | 3  | 1    |          |        |      | 10 m. ... |
| 7  | 4  |      | North    | East   |      | ...       |
| 8  | 4  |      |          |        |      | ...       |
| 9  | 4  |      |          |        |      | ...       |
| 10 | 4  |      |          |        |      | ...       |
| 11 | 4  |      | East     |        |      | ...       |
| 12 | 4  |      |          |        |      | ...       |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 4  |      | North    | East   |      | ...      |
| 2  | 4  |      |          |        |      | ...      |
| 3  | 4  |      | North    |        |      | ...      |
| 4  | 4  |      |          |        |      | ...      |
| 5  | 4  |      | North    |        |      | ...      |
| 6  | 3  | 1    |          |        |      | ...      |
| 7  | 4  |      |          |        |      | ...      |
| 8  | 4  |      |          |        |      | ...      |
| 9  | 3  |      | North    |        |      | ...      |
| 10 | 3  |      |          |        |      | ...      |
| 11 | 2  | 1    | North    |        |      | ...      |
| 12 | 2  | 1    | East     |        |      | ...      |
| 1  | 3  |      | East     |        |      | ...      |
| 2  | 3  |      |          |        |      | ...      |
| 3  | 3  | 1    |          |        |      | ...      |
| 4  | 3  | 1    |          |        |      | ...      |
| 5  | 3  |      | North    |        |      | ...      |
| 6  | 3  |      |          |        |      | ...      |
| 7  | 3  |      |          |        |      | ...      |
| 8  | 3  |      |          |        |      | ...      |
| 9  | 4  |      |          |        |      | ...      |
| 10 | 4  |      |          |        |      | ...      |
| 11 | 4  |      |          |        |      | ...      |
| 12 | 4  |      |          |        |      | ...      |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



... from ... towards ...

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.  |
|----|----|-------|----------|--------|------|-----------|
| 1  | 2  |       |          | amb    |      |           |
| 2  | 2  |       |          |        |      |           |
| 3  | 2  |       | North    |        |      | 2 1/2 ... |
| 4  | 2  |       |          |        |      | 4 ...     |
| 5  | 2  | 1     | North    |        |      | 8 ...     |
| 6  | 2  | 1     |          |        |      | 8 ...     |
| 7  | 2  |       |          |        |      | 9 30 ...  |
| 8  | 2  |       |          |        |      |           |
| 9  | 2  |       |          |        |      |           |
| 10 | 2  |       |          |        |      |           |
| 11 | 1  | 1     |          |        |      |           |
| 12 | 1  | 1     |          |        |      |           |
| 1  | 2  |       |          |        |      |           |
| 2  | 2  |       |          |        |      |           |
| 3  | 2  |       |          |        |      |           |
| 4  | 2  |       |          |        |      |           |
| 5  | 1  | 1     | North    |        |      |           |
| 6  | 2  |       |          |        |      |           |
| 7  | 2  |       |          |        |      |           |
| 8  | 2  |       |          |        |      |           |
| 9  | 4  |       |          |        |      |           |
| 10 | 4  |       |          |        |      |           |
| 11 | 4  |       |          |        |      |           |
| 12 | 4  |       |          |        |      |           |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | 1 1/2       |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.  |
|----|----|-------|----------|--------|------|-----------|
| 1  | 2  |       |          | amb    |      |           |
| 2  | 2  |       |          |        |      |           |
| 3  | 2  |       |          |        |      |           |
| 4  | 2  |       |          |        |      |           |
| 5  | 2  |       | North    |        |      | 2 1/2 ... |
| 6  | 2  |       |          |        |      | 4 ...     |
| 7  | 2  |       | North    |        |      | 8 ...     |
| 8  | 4  |       |          |        |      | " ...     |
| 9  | 4  |       | North    |        |      | 8 ...     |
| 10 | 4  |       |          |        |      | 9 ...     |
| 11 | 5  |       |          |        |      | 10 ...    |
| 12 | 5  |       |          |        |      | 11 ...    |
| 1  | 1  | 1     |          |        |      | 12 ...    |
| 2  | 1  | 1     |          |        |      | 1 ...     |
| 3  | 1  | 1     |          |        |      | 2 ...     |
| 4  | 1  | 1     |          |        |      | 3 ...     |
| 5  | 1  | 1     |          |        |      | 4 ...     |
| 6  | 1  | 1     |          |        |      | 5 ...     |
| 7  | 1  | 1     |          |        |      | 6 ...     |
| 8  | 1  | 1     |          |        |      | 7 ...     |
| 9  | 1  | 1     |          |        |      | 8 ...     |
| 10 | 1  | 1     |          |        |      | 9 ...     |
| 11 | 1  | 1     |          |        |      | 10 ...    |
| 12 | 1  | 1     |          |        |      | 11 ...    |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | 1 1/2       |        |             |           |              |



from *London* towards *the Cape*

| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks.                      |
|----|----|------|----------|--------|------|-------------------------------|
| 1  | 4  | 1    | SE       | light  |      | commenced with a light breeze |
| 2  | 4  | 1    |          |        |      | by the                        |
| 3  | 4  | 1    |          |        |      | from the                      |
| 4  | 4  | 1    |          |        |      | from the                      |
| 5  | 4  | 1    | SE       |        |      | from the                      |
| 6  | 4  | 1    |          |        |      | from the                      |
| 7  | 4  | 1    |          |        |      | from the                      |
| 8  | 4  | 1    |          |        |      | from the                      |
| 9  | 4  | 1    |          |        |      | from the                      |
| 10 | 4  | 1    |          |        |      | from the                      |
| 11 | 4  | 1    |          |        |      | from the                      |
| 12 | 4  | 1    |          |        |      | from the                      |
| 1  | 4  | 1    | SE       |        |      | from the                      |
| 2  | 4  | 1    |          |        |      | from the                      |
| 3  | 4  | 1    |          |        |      | from the                      |
| 4  | 4  | 1    |          |        |      | from the                      |
| 5  | 4  | 1    | SE       |        |      | from the                      |
| 6  | 4  | 1    |          |        |      | from the                      |
| 7  | 4  | 1    | SE       |        |      | from the                      |
| 8  | 4  | 1    | SE       |        |      | from the                      |
| 9  | 4  | 1    |          |        |      | from the                      |
| 10 | 4  | 1    | SE       |        |      | from the                      |
| 11 | 4  | 1    | SE       |        |      | from the                      |
| 12 | 4  | 1    |          |        |      | from the                      |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks.                      |
|----|----|------|----------|--------|------|-------------------------------|
| 1  | 4  | 1    | SE       | light  |      | commenced with a light breeze |
| 2  | 4  | 1    |          |        |      | by the                        |
| 3  | 4  | 1    |          |        |      | from the                      |
| 4  | 4  | 1    |          |        |      | from the                      |
| 5  | 4  | 1    |          |        |      | from the                      |
| 6  | 4  | 1    |          |        |      | from the                      |
| 7  | 4  | 1    |          |        |      | from the                      |
| 8  | 4  | 1    |          |        |      | from the                      |
| 9  | 4  | 1    |          |        |      | from the                      |
| 10 | 4  | 1    |          |        |      | from the                      |
| 11 | 4  | 1    |          |        |      | from the                      |
| 12 | 4  | 1    |          |        |      | from the                      |
| 1  | 4  | 1    | SE       |        |      | from the                      |
| 2  | 4  | 1    |          |        |      | from the                      |
| 3  | 4  | 1    |          |        |      | from the                      |
| 4  | 4  | 1    | SE       |        |      | from the                      |
| 5  | 4  | 1    | SE       |        |      | from the                      |
| 6  | 4  | 1    |          |        |      | from the                      |
| 7  | 4  | 1    |          |        |      | from the                      |
| 8  | 4  | 1    |          |        |      | from the                      |
| 9  | 4  | 1    |          |        |      | from the                      |
| 10 | 4  | 1    |          |        |      | from the                      |
| 11 | 4  | 1    |          |        |      | from the                      |
| 12 | 4  | 1    |          |        |      | from the                      |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



Left the harbor from ... towards ...

| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. | Day.        | Light.    | Time.        |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       | 2     |            | 16       | Light         |             | ...      |             |           |              |
| 2       | 2     |            |          |               |             | ...      |             |           |              |
| 3       | 2     |            |          |               |             | ...      |             |           |              |
| 4       | 3     |            | Light    |               |             | ...      |             |           |              |
| 5       | 4     |            |          |               |             | ...      |             |           |              |
| 6       | 5     |            |          |               |             | ...      |             |           |              |
| 7       | 6     |            |          |               |             | ...      |             |           |              |
| 8       | 7     |            |          |               |             | ...      |             |           |              |
| 9       | 8     |            |          |               |             | ...      |             |           |              |
| 10      | 9     |            |          |               |             | ...      |             |           |              |
| 11      | 10    |            |          |               |             | ...      |             |           |              |
| 12      | 11    |            | Light    |               |             | ...      |             |           |              |
| 1       | 12    |            |          |               |             | ...      |             |           |              |
| 2       | 1     |            | Light    |               |             | ...      |             |           |              |
| 3       | 2     |            |          |               |             | ...      |             |           |              |
| 4       | 3     |            |          |               |             | ...      |             |           |              |
| 5       | 4     |            |          |               |             | ...      |             |           |              |
| 6       | 5     | 1          |          |               |             | ...      |             |           |              |
| 7       | 6     | 1          |          |               |             | ...      |             |           |              |
| 8       | 7     | 1          |          |               |             | ...      |             |           |              |
| 9       | 8     | 1          |          |               |             | ...      |             |           |              |
| 10      | 9     |            |          |               |             | ...      |             |           |              |
| 11      | 10    |            |          |               |             | ...      |             |           |              |
| 12      | 11    |            |          |               |             | ...      |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |
|---------|-------|------------|----------|---------------|-------------|----------|
| 1       |       |            | ...      |               |             | ...      |
| 2       |       |            | ...      |               |             | ...      |
| 3       |       |            | ...      |               |             | ...      |
| 4       |       |            | ...      |               |             | ...      |
| 5       |       |            | ...      |               |             | ...      |
| 6       |       |            | ...      |               |             | ...      |
| 7       |       |            | ...      |               |             | ...      |
| 8       |       |            | ...      |               |             | ...      |
| 9       |       |            | ...      |               |             | ...      |
| 10      |       |            | ...      |               |             | ...      |
| 11      |       |            | ...      |               |             | ...      |
| 12      |       |            | ...      |               |             | ...      |
| 1       |       |            | ...      |               |             | ...      |
| 2       |       |            | ...      |               |             | ...      |
| 3       |       |            | ...      |               |             | ...      |
| 4       |       |            | ...      |               |             | ...      |
| 5       |       |            | ...      |               |             | ...      |
| 6       |       |            | ...      |               |             | ...      |
| 7       |       |            | ...      |               |             | ...      |
| 8       |       |            | ...      |               |             | ...      |
| 9       |       |            | ...      |               |             | ...      |
| 10      |       |            | ...      |               |             | ...      |
| 11      |       |            | ...      |               |             | ...      |
| 12      |       |            | ...      |               |             | ...      |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   |



from *St. Louis* towards *St. Louis*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



| from towards |    |       |          |            |      |               |             |        |             |           |              |
|--------------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| H.           | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
| 1            |    |       |          |            |      |               |             |        |             |           |              |
| 2            |    |       |          |            |      |               |             |        |             |           |              |
| 3            |    |       |          |            |      |               |             |        |             |           |              |
| 4            |    |       |          |            |      |               |             |        |             |           |              |
| 5            |    |       |          |            |      |               |             |        |             |           |              |
| 6            |    |       |          |            |      |               |             |        |             |           |              |
| 7            |    |       |          |            |      |               |             |        |             |           |              |
| 8            |    |       |          |            |      |               |             |        |             |           |              |
| 9            |    |       |          |            |      |               |             |        |             |           |              |
| 10           |    |       |          |            |      |               |             |        |             |           |              |
| 11           |    |       |          |            |      |               |             |        |             |           |              |
| 12           |    |       |          |            |      |               |             |        |             |           |              |
| 1            |    |       |          |            |      |               |             |        |             |           |              |
| 2            |    |       |          |            |      |               |             |        |             |           |              |
| 3            |    |       |          |            |      |               |             |        |             |           |              |
| 4            |    |       |          |            |      |               |             |        |             |           |              |
| 5            |    |       |          |            |      |               |             |        |             |           |              |
| 6            |    |       |          |            |      |               |             |        |             |           |              |
| 7            |    |       |          |            |      |               |             |        |             |           |              |
| 8            |    |       |          |            |      |               |             |        |             |           |              |
| 9            |    |       |          |            |      |               |             |        |             |           |              |
| 10           |    |       |          |            |      |               |             |        |             |           |              |
| 11           |    |       |          |            |      |               |             |        |             |           |              |
| 12           |    |       |          |            |      |               |             |        |             |           |              |
| Course.      |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|              |    |       |          |            |      |               |             |        |             |           |              |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               |             |        |             |           |              |



| from    |    |       |          |            |      |          | towards |               |  |             |  |        |  |             |  |           |  |              |  |
|---------|----|-------|----------|------------|------|----------|---------|---------------|--|-------------|--|--------|--|-------------|--|-----------|--|--------------|--|
| H.      | K. | H.K.  | Courses. | Winds.     | Lec. | Remarks. |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 1       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 2       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 3       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 4       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 5       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 6       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 7       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 8       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 9       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 10      |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 11      |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 12      |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 1       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 2       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 3       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 4       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 5       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 6       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 7       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 8       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 9       |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 10      |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 11      |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| 12      |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |
| Course. |    | Dist. |          | Diff. lat. |      | Dep.     |         | Lat. by D. R. |  | Lat. by Ob. |  | Varia. |  | Diff. Long. |  | Long. in. |  | Long. by Ob. |  |
|         |    |       |          |            |      |          |         |               |  |             |  |        |  |             |  |           |  |              |  |

| H.      | K. | H.K.  | Courses. | Winds.     | Lec. | Remarks. |  |               |  |             |  |        |  |             |  |           |  |              |  |
|---------|----|-------|----------|------------|------|----------|--|---------------|--|-------------|--|--------|--|-------------|--|-----------|--|--------------|--|
| 1       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 2       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 3       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 4       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 5       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 6       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 7       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 8       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 9       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 10      |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 11      |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 12      |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 1       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 2       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 3       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 4       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 5       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 6       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 7       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 8       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 9       |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 10      |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 11      |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| 12      |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |
| Course. |    | Dist. |          | Diff. lat. |      | Dep.     |  | Lat. by D. R. |  | Lat. by Ob. |  | Varia. |  | Diff. Long. |  | Long. in. |  | Long. by Ob. |  |
|         |    |       |          |            |      |          |  |               |  |             |  |        |  |             |  |           |  |              |  |



Ship S. Parker from Boston for towards N. York

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 10 |       | by N. E. |        |      |          |
| 2  | 10 |       |          |        |      |          |
| 3  | 10 |       |          |        |      |          |
| 4  | 10 |       |          |        |      |          |
| 5  | 10 |       |          |        |      |          |
| 6  | 10 |       |          |        |      |          |
| 7  | 10 |       |          |        |      |          |
| 8  | 9  |       |          |        |      |          |
| 9  | 9  |       |          |        |      |          |
| 10 | 8  |       | by N. E. |        |      |          |
| 11 | 8  |       |          |        |      |          |
| 12 | 8  |       |          |        |      |          |
| 1  | 8  |       |          |        |      |          |
| 2  | 9  |       |          |        |      |          |
| 3  | 2  |       |          |        |      |          |
| 4  | 2  |       | by N. E. |        |      |          |
| 5  | 2  |       |          |        |      |          |
| 6  | 2  |       |          |        |      |          |
| 7  | 2  |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



Running from Long Bay towards Maria -

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks.   |
|----|----|------|----------|--------|------|--|
| 1  |    |      |          |        |      | Commenced with first breeze S by E within            |
| 2  |    |      |          |        |      | 3 1/2 m. Captain came aboard & at the ship           |
| 3  |    |      |          |        |      | was kept & proceeded at the same passage             |
| 4  |    |      |          |        |      | 5.30. I anchored at the point                        |
| 5  |    |      |          |        |      |  |
| 6  |    |      |          |        |      |  |
| 7  | 10 |      | SE       | at 10  |      |  |
| 8  | 11 |      |          |        |      |  |
| 9  | 10 |      |          |        |      |  |
| 10 | 8  |      | SE 1/2 E |        |      | 8.00. The ship 18 miles S by E from Maria            |
| 11 | 8  |      |          |        |      | 11. I made up the ship                               |
| 12 | 1  |      |          |        |      | about 12.00. The ship is 10 miles S by E from Maria  |
| 1  | 1  |      |          |        |      | here I. I. I. I. I.                                  |
| 2  | 6  |      |          |        |      |  |
| 3  | 6  |      |          |        |      |  |
| 4  | 7  |      |          |        |      |  |
| 5  | 7  |      |          |        |      | 4.00. I made up the ship 10 miles S by E from Maria  |
| 6  | 6  |      |          |        |      | 8.00. I made up the ship 10 miles S by E from Maria  |
| 7  | 8  |      |          |        |      |  |
| 8  | 8  |      |          |        |      |  |
| 9  | 7  | 1    |          |        |      | 10.00. I made up the ship 10 miles S by E from Maria |
| 10 | 7  | 1    |          |        |      |  |
| 11 | 8  |      |          |        |      | End with strong gale                                 |
| 12 | 8  |      |          |        |      |  |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|----------|-------------|-----------|--------------|
|         |       |            |      |               |             | SE 1/2 E |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks.  |
|----|----|------|----------|--------|------|---|
| 1  | 8  |      | SE 1/2 E | at 10  |      | Commenced with strong gale, first                   |
| 2  | 8  |      |          |        |      | and proceeded at the same passage                   |
| 3  | 1  |      |          |        |      |   |
| 4  | 7  |      |          |        |      |   |
| 5  | 7  |      |          |        |      |   |
| 6  | 6  |      |          |        |      |   |
| 7  | 6  |      |          |        |      |   |
| 8  | 6  |      |          |        |      |   |
| 9  | 1  |      |          |        |      |   |
| 10 | 6  |      |          |        |      |   |
| 11 | 6  | 1    |          |        |      |   |
| 12 | 6  | 1    | SE 1/2 E |        |      | 8.00. The ship 18 miles S by E from Maria           |
| 1  | 6  | 1    |          |        |      | 11. I made up the ship                              |
| 2  | 6  |      |          |        |      | about 12.00. The ship is 10 miles S by E from Maria |
| 3  | 6  |      |          |        |      | here I. I. I. I. I.                                 |
| 4  | 2  |      |          |        |      |   |
| 5  | 2  |      |          |        |      |   |
| 6  | 8  |      |          |        |      |   |
| 7  | 4  |      |          |        |      | 4.00. I made up the ship 10 miles S by E from Maria |
| 8  | 3  |      |          |        |      | 8.00. I made up the ship 10 miles S by E from Maria |
| 9  | 3  |      |          |        |      |   |
| 10 | 4  |      |          |        |      | End with strong gale                                |
| 11 | 5  |      |          |        |      |   |
| 12 | 6  |      |          |        |      |   |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|----------|-------------|-----------|--------------|
|         |       |            |      |               |             | SE 1/2 E |             |           |              |



Left New York from Long towards ...

| H.   | K.    | H. K.      | Courses. | Winds.        | Lec.        | Remarks.                            |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
|--|-------|------------|----------|---------------|-------------|-------------------------------------|-------------|-----------|--------------|------|---------------|-------------|--------|-------------|-----------|--------------|--|--|--|--|--|---------|--|--|--|------------|
| 1  | 5     |            | W        | East          |             | commenced with strong breeze, being |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 2  | 0     |            |          |               |             | in evening                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 3  | 4     |            |          |               |             | in evening                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 4  | 3     |            | E. N. E. | East          |             | in evening                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 5  | 4     |            |          |               |             | 3 P.M. ... from the ...             |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 6  | 4     |            |          |               |             | ... but the ...                     |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 7  | 3     |            | W        |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 8  | 3     |            |          |               |             | 10 P.M. ...                         |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 9  | 3     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 10   | 3     |            | E        |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 11   | 3     |            | W        |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 12   | 3     |            | W        |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 1  | 3     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 2  | 4     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 3  | 4     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 4  | 4     |            | E. N. E. |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 5  | 4     |            |          |               |             | 3 P.M. ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 6  | 5     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 7  | 5     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 8  | 6     | 1          |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 9  | 6     | 1          | E. N. E. |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 10   | 7     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 11   | 7     |            |          |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| 12   | 7     | 1          | E. N. E. |               |             | ... of ...                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
| <table><tr><th>Course.</th><th>Dist.</th><th>Diff. lat.</th><th>Dep.</th><th>Lat. by D. R.</th><th>Lat. by Ob.</th><th>Varia.</th><th>Diff. Long.</th><th>Long. in.</th><th>Long. by Ob.</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td>112° 4'</td><td></td><td></td><td></td><td>116° 43' E</td></tr></table> |       |            |          |               |             |                                     | Course.     | Dist.     | Diff. lat.   | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |  |  |  |  |  | 112° 4' |  |  |  | 116° 43' E |
| Course.  | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.                              | Diff. Long. | Long. in. | Long. by Ob. |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |
|  |       |            |          |               | 112° 4'     |                                     |             |           | 116° 43' E   |      |               |             |        |             |           |              |  |  |  |  |  |         |  |  |  |            |

| H.  | K.    | H. K.      | Courses. | Winds.        | Lec.        | Remarks.                              |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
|---|-------|------------|----------|---------------|-------------|---------------------------------------|-------------|------------|-------------|------|---------------|-------------|--------|-------------|-----------|-------------|--|--|--|--|--|-----------|--|--|------------|--|
| 1   | 6     |            | W        | W             |             | commenced with strong breeze, passing |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 2   | 6     |            |          |               |             | in evening                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 3   | 6     |            |          |               |             | in evening                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 4   | 6     |            |          |               |             | in evening                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 5   | 6     |            |          |               |             | 3 P.M. ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 6   | 6     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 7   | 6     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 8   | 6     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 9   | 6     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 10  | 6     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 11  | 6     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 12  | 6     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 1   | 3     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 2   | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 3   | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 4   | 3     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 5   | 3     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 6   | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 7   | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 8   | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 9   | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 10  | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 11  | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| 12  | 4     |            |          |               |             | ... of ...                            |             |            |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
| <table><tr><th>Course.</th><th>Dist.</th><th>Diff. lat.</th><th>Dep.</th><th>Lat. by D. R.</th><th>Lat. by Ob.</th><th>Varia.</th><th>Diff. Long.</th><th>Long. in.</th><th>Long by Ob.</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td>113° 2' E</td><td></td><td></td><td>114° 12' E</td><td></td></tr></table> |       |            |          |               |             |                                       | Course.     | Dist.      | Diff. lat.  | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long by Ob. |  |  |  |  |  | 113° 2' E |  |  | 114° 12' E |  |
| Course.   | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.                                | Diff. Long. | Long. in.  | Long by Ob. |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |
|   |       |            |          |               | 113° 2' E   |                                       |             | 114° 12' E |             |      |               |             |        |             |           |             |  |  |  |  |  |           |  |  |            |  |



Left *Long Island* from *Long Island* towards *Florida* -

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks.                    |
|----|----|------|----------|--------|------|-----------------------------|
| 1  | 4  |      |          |        |      | Commenced with light breeze |
| 2  | 4  |      |          |        |      |                             |
| 3  | 4  |      |          |        |      | Increased to moderate       |
| 4  | 4  |      |          |        |      |                             |
| 5  | 4  |      |          |        |      |                             |
| 6  | 4  |      |          |        |      |                             |
| 7  | 4  |      |          |        |      |                             |
| 8  | 4  |      |          |        |      |                             |
| 9  | 4  |      |          |        |      |                             |
| 10 | 4  |      |          |        |      |                             |
| 11 | 4  | 1    |          |        |      |                             |
| 12 | 4  | 1    |          |        |      |                             |
| 1  | 4  | 1    |          |        |      |                             |
| 2  | 4  | 1    |          |        |      |                             |
| 3  | 4  | 1    |          |        |      |                             |
| 4  | 4  | 1    |          |        |      |                             |
| 5  | 4  | 1    |          |        |      |                             |
| 6  | 4  | 1    |          |        |      |                             |
| 7  | 4  | 1    |          |        |      |                             |
| 8  | 4  | 1    |          |        |      |                             |
| 9  | 4  | 1    |          |        |      |                             |
| 10 | 4  | 1    |          |        |      |                             |
| 11 | 4  | 1    |          |        |      |                             |
| 12 | 4  | 1    |          |        |      |                             |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 4  |      |          |        |      |          |
| 2  | 4  |      |          |        |      |          |
| 3  | 4  |      |          |        |      |          |
| 4  | 4  |      |          |        |      |          |
| 5  | 4  |      |          |        |      |          |
| 6  | 4  |      |          |        |      |          |
| 7  | 4  |      |          |        |      |          |
| 8  | 4  | 1    |          |        |      |          |
| 9  | 4  | 1    |          |        |      |          |
| 10 | 4  | 1    |          |        |      |          |
| 11 | 4  | 1    |          |        |      |          |
| 12 | 4  | 1    |          |        |      |          |
| 1  | 4  | 1    |          |        |      |          |
| 2  | 4  | 1    |          |        |      |          |
| 3  | 4  | 1    |          |        |      |          |
| 4  | 4  | 1    |          |        |      |          |
| 5  | 4  | 1    |          |        |      |          |
| 6  | 4  | 1    |          |        |      |          |
| 7  | 4  | 1    |          |        |      |          |
| 8  | 4  | 1    |          |        |      |          |
| 9  | 4  | 1    |          |        |      |          |
| 10 | 4  | 1    |          |        |      |          |
| 11 | 4  | 1    |          |        |      |          |
| 12 | 4  | 1    |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



| <div> <div> from </div> <div> towards </div> </div> |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
|---|----|-------|----------|------------|------|----------|--|--------------|--|-------------|--|-------|--|-------------|--|-----------|--|--------------|--|
| No.   | K. | M.K.  | Courses. | Winds.     | Lee. | Remarks. |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 1   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 2   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 3   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 4   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 5   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 6   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 7   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 8   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 9   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 10  |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 11  |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 12  |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 1   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 2   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 3   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 4   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 5   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 6   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 7   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 8   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 9   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 10  |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 11  |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 12  |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| Lat.  |    | Dist. |          | Diff. Lat. |      | Long.    |  | Lat. by D.R. |  | Lat. by Ob. |  | Vari. |  | Diff. Long. |  | Long. in. |  | Long. by Ob. |  |
|   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |

| No.  | K. | M.K.  | Courses. | Winds.     | Lee. | Remarks. |  |              |  |             |  |       |  |             |  |           |  |              |  |
|------|----|-------|----------|------------|------|----------|--|--------------|--|-------------|--|-------|--|-------------|--|-----------|--|--------------|--|
| 1    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 2    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 3    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 4    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 5    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 6    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 7    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 8    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 9    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 10   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 11   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 12   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 1    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 2    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 3    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 4    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 5    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 6    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 7    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 8    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 9    |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 10   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 11   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| 12   |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |
| Lat. |    | Dist. |          | Diff. Lat. |      | Long.    |  | Lat. by D.R. |  | Lat. by Ob. |  | Vari. |  | Diff. Long. |  | Long. in. |  | Long. by Ob. |  |
|      |    |       |          |            |      |          |  |              |  |             |  |       |  |             |  |           |  |              |  |



| from <i>the</i> towards <i>the</i> |       |            |          |               |             |          |             |           |              |
|------------------------------------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| H.                                 | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
| 1                                  |       |            |          |               |             |          |             |           |              |
| 2                                  |       |            |          |               |             |          |             |           |              |
| 3                                  |       |            |          |               |             |          |             |           |              |
| 4                                  |       |            |          |               |             |          |             |           |              |
| 5                                  |       |            |          |               |             |          |             |           |              |
| 6                                  |       |            |          |               |             |          |             |           |              |
| 7                                  |       |            |          |               |             |          |             |           |              |
| 8                                  |       |            |          |               |             |          |             |           |              |
| 9                                  |       |            |          |               |             |          |             |           |              |
| 10                                 |       |            |          |               |             |          |             |           |              |
| 11                                 |       |            |          |               |             |          |             |           |              |
| 12                                 |       |            |          |               |             |          |             |           |              |
| 1                                  |       |            |          |               |             |          |             |           |              |
| 2                                  |       |            |          |               |             |          |             |           |              |
| 3                                  |       |            |          |               |             |          |             |           |              |
| 4                                  |       |            |          |               |             |          |             |           |              |
| 5                                  |       |            |          |               |             |          |             |           |              |
| 6                                  |       |            |          |               |             |          |             |           |              |
| 7                                  |       |            |          |               |             |          |             |           |              |
| 8                                  |       |            |          |               |             |          |             |           |              |
| 9                                  |       |            |          |               |             |          |             |           |              |
| 10                                 |       |            |          |               |             |          |             |           |              |
| 11                                 |       |            |          |               |             |          |             |           |              |
| 12                                 |       |            |          |               |             |          |             |           |              |
| Course.                            | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
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| H.      | K.    | H.K.       | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
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| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
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| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
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| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
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from *London* towards *London*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
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| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
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| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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*towards*

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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*from*                      *towards*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
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| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Variat. | Diff. Long. | Long. in. | Long. by Ob. |
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| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
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| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Variat. | Diff. Long. | Long. in. | Long. by Ob. |
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|         |    | from  |            | towards |               |             |        |             |           |              |
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| H.      | K. | H.K.  | Courses.   | Winds.  | Lee.          | Remarks.    |        |             |           |              |
| 1       |    |       |            |         |               |             |        |             |           |              |
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| 4       |    |       |            |         |               |             |        |             |           |              |
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| 6       |    |       |            |         |               |             |        |             |           |              |
| 7       |    |       |            |         |               |             |        |             |           |              |
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| 9       |    |       |            |         |               |             |        |             |           |              |
| 10      |    |       |            |         |               |             |        |             |           |              |
| 11      |    |       |            |         |               |             |        |             |           |              |
| 12      |    |       |            |         |               |             |        |             |           |              |
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| 3       |    |       |            |         |               |             |        |             |           |              |
| 4       |    |       |            |         |               |             |        |             |           |              |
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| 10      |    |       |            |         |               |             |        |             |           |              |
| 11      |    |       |            |         |               |             |        |             |           |              |
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| Course. |    | Dist. | Diff. lat. | Dep.    | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| H.      | K. | H.K.  | Courses.   | Winds. | Lee.          | Remarks.    |        |             |           |              |
|---------|----|-------|------------|--------|---------------|-------------|--------|-------------|-----------|--------------|
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| 4       |    |       |            |        |               |             |        |             |           |              |
| 5       |    |       |            |        |               |             |        |             |           |              |
| 6       |    |       |            |        |               |             |        |             |           |              |
| 7       |    |       |            |        |               |             |        |             |           |              |
| 8       |    |       |            |        |               |             |        |             |           |              |
| 9       |    |       |            |        |               |             |        |             |           |              |
| 10      |    |       |            |        |               |             |        |             |           |              |
| 11      |    |       |            |        |               |             |        |             |           |              |
| 12      |    |       |            |        |               |             |        |             |           |              |
| 1       |    |       |            |        |               |             |        |             |           |              |
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| 3       |    |       |            |        |               |             |        |             |           |              |
| 4       |    |       |            |        |               |             |        |             |           |              |
| 5       |    |       |            |        |               |             |        |             |           |              |
| 6       |    |       |            |        |               |             |        |             |           |              |
| 7       |    |       |            |        |               |             |        |             |           |              |
| 8       |    |       |            |        |               |             |        |             |           |              |
| 9       |    |       |            |        |               |             |        |             |           |              |
| 10      |    |       |            |        |               |             |        |             |           |              |
| 11      |    |       |            |        |               |             |        |             |           |              |
| 12      |    |       |            |        |               |             |        |             |           |              |
| Course. |    | Dist. | Diff. lat. | Dep.   | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |            |        |               | 130°        |        |             |           |              |



| from    |    | towards |            |        |               |             |        |             |           |              |
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| ll.     | K. | ll. K.  | Courses.   | Winds. | Lee.          | Remarks.    |        |             |           |              |
| 1       |    |         |            |        |               |             |        |             |           |              |
| 2       |    |         |            |        |               |             |        |             |           |              |
| 3       |    |         |            |        |               |             |        |             |           |              |
| 4       |    |         |            |        |               |             |        |             |           |              |
| 5       |    |         |            |        |               |             |        |             |           |              |
| 6       |    |         |            |        |               |             |        |             |           |              |
| 7       |    |         |            |        |               |             |        |             |           |              |
| 8       |    |         |            |        |               |             |        |             |           |              |
| 9       |    |         |            |        |               |             |        |             |           |              |
| 10      |    |         |            |        |               |             |        |             |           |              |
| 11      |    |         |            |        |               |             |        |             |           |              |
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| ll.     | K. | ll. K. | Courses.   | Winds. | Lee.          | Remarks.    |        |             |           |              |
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from

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| 3  | 7  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 4  |      |          |        |      |          |
| 12 | 4  |      |          |        |      |          |
| 1  | 1  |      |          |        |      |          |
| 2  | 2  |      |          |        |      |          |
| 3  | 3  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  | 4  |      |          |        |      |          |
| 6  | 4  |      |          |        |      |          |
| 7  | 4  |      |          |        |      |          |
| 8  | 4  |      |          |        |      |          |
| 9  | 7  |      |          |        |      |          |
| 10 | 6  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
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| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
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| 1  | 4  |      |          |        |      |          |
| 2  | 2  |      |          |        |      |          |
| 3  | 4  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 4  |      |          |        |      |          |
| 6  | 3  |      |          |        |      |          |
| 7  | 6  |      |          |        |      |          |
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| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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|    |    | from |          | towards |      |          |
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| H. | K. | H.K. | Courses. | Winds.  | Lec. | Remarks. |
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| 11 |    |      |          |         |      |          |
| 12 |    |      |          |         |      |          |
| 1  |    |      |          |         |      |          |
| 2  |    |      |          |         |      |          |
| 3  |    |      |          |         |      |          |
| 4  |    |      |          |         |      |          |
| 5  |    |      |          |         |      |          |
| 6  |    |      |          |         |      |          |
| 7  |    |      |          |         |      |          |
| 8  |    |      |          |         |      |          |
| 9  |    |      |          |         |      |          |
| 10 |    |      |          |         |      |          |
| 11 |    |      |          |         |      |          |
| 12 |    |      |          |         |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



| from <i>North</i> towards <i>South</i> |       |            |          |               |             |          |             |           |              |
|--|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| H.                                     | K.    | H. K.      | Courses. | Winds.        | Lce.        | Remarks. |             |           |              |
| 1                                      | 1     |            |          |               |             |          |             |           |              |
| 2                                      | 2     |            |          |               |             |          |             |           |              |
| 3                                      | 3     |            |          |               |             |          |             |           |              |
| 4                                      | 4     |            |          |               |             |          |             |           |              |
| 5                                      | 5     |            |          |               |             |          |             |           |              |
| 6                                      | 6     |            |          |               |             |          |             |           |              |
| 7                                      | 7     |            |          |               |             |          |             |           |              |
| 8                                      | 8     |            |          |               |             |          |             |           |              |
| 9                                      | 9     |            |          |               |             |          |             |           |              |
| 10                                     | 10    |            |          |               |             |          |             |           |              |
| 11                                     | 11    |            |          |               |             |          |             |           |              |
| 12                                     | 12    |            |          |               |             |          |             |           |              |
| 1                                      | 1     |            |          |               |             |          |             |           |              |
| 2                                      | 2     |            |          |               |             |          |             |           |              |
| 3                                      | 3     |            |          |               |             |          |             |           |              |
| 4                                      | 4     |            |          |               |             |          |             |           |              |
| 5                                      | 5     |            |          |               |             |          |             |           |              |
| 6                                      | 6     |            |          |               |             |          |             |           |              |
| 7                                      | 7     |            |          |               |             |          |             |           |              |
| 8                                      | 8     |            |          |               |             |          |             |           |              |
| 9                                      | 9     |            |          |               |             |          |             |           |              |
| 10                                     | 10    |            |          |               |             |          |             |           |              |
| 11                                     | 11    |            |          |               |             |          |             |           |              |
| 12                                     | 12    |            |          |               |             |          |             |           |              |
| Course.                                | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|  |       |            |          |               | 1° 5' 3"    |          |             |           |              |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lce.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 2     |            |          |               |             |          |             |           |              |
| 3       | 3     |            |          |               |             |          |             |           |              |
| 4       | 4     |            |          |               |             |          |             |           |              |
| 5       | 5     |            |          |               |             |          |             |           |              |
| 6       | 6     |            |          |               |             |          |             |           |              |
| 7       | 7     |            |          |               |             |          |             |           |              |
| 8       | 8     |            |          |               |             |          |             |           |              |
| 9       | 9     |            |          |               |             |          |             |           |              |
| 10      | 10    |            |          |               |             |          |             |           |              |
| 11      | 11    |            |          |               |             |          |             |           |              |
| 12      | 12    |            |          |               |             |          |             |           |              |
| 1       | 1     |            |          |               |             |          |             |           |              |
| 2       | 2     |            |          |               |             |          |             |           |              |
| 3       | 3     |            |          |               |             |          |             |           |              |
| 4       | 4     |            |          |               |             |          |             |           |              |
| 5       | 5     |            |          |               |             |          |             |           |              |
| 6       | 6     |            |          |               |             |          |             |           |              |
| 7       | 7     |            |          |               |             |          |             |           |              |
| 8       | 8     |            |          |               |             |          |             |           |              |
| 9       | 9     |            |          |               |             |          |             |           |              |
| 10      | 10    |            |          |               |             |          |             |           |              |
| 11      | 11    |            |          |               |             |          |             |           |              |
| 12      | 12    |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
|         |       |            |          |               | 8° 56' 4"   |          |             |           |              |



from *the ...* towards *the ...*

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 8  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 2  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  | 4  |      |          |        |      |          |
| 6  | 5  |      |          |        |      |          |
| 7  | 6  |      |          |        |      |          |
| 8  | 7  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 9  |      |          |        |      |          |
| 11 | 10 |      |          |        |      |          |
| 12 | 11 |      |          |        |      |          |
| 1  | 2  |      |          |        |      |          |
| 2  | 3  |      |          |        |      |          |
| 3  | 4  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 6  |      |          |        |      |          |
| 6  | 7  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 9  |      |          |        |      |          |
| 9  | 10 |      |          |        |      |          |
| 10 | 11 |      |          |        |      |          |
| 11 | 12 |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 8  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 2  |      |          |        |      |          |
| 4  | 3  |      |          |        |      |          |
| 5  | 4  |      |          |        |      |          |
| 6  | 5  |      |          |        |      |          |
| 7  | 6  |      |          |        |      |          |
| 8  | 7  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 9  |      |          |        |      |          |
| 11 | 10 |      |          |        |      |          |
| 12 | 11 |      |          |        |      |          |
| 1  | 2  |      |          |        |      |          |
| 2  | 3  |      |          |        |      |          |
| 3  | 4  |      |          |        |      |          |
| 4  | 5  |      |          |        |      |          |
| 5  | 6  |      |          |        |      |          |
| 6  | 7  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 9  |      |          |        |      |          |
| 9  | 10 |      |          |        |      |          |
| 10 | 11 |      |          |        |      |          |
| 11 | 12 |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |



Ship *the sailing* from *W. 100 miles* towards *W. 100 miles*

| H. | K. | H. K. | Courses.      | Winds.        | Lee. | Remarks. |
|----|----|-------|---------------|---------------|------|----------|
| 1  | 3  |       | <i>W. 100</i> | <i>W. 100</i> |      |          |
| 2  | 3  |       |               |               |      |          |
| 3  | 3  |       |               |               |      |          |
| 4  | 3  |       |               |               |      |          |
| 5  | 3  |       |               |               |      |          |
| 6  | 3  |       |               |               |      |          |
| 7  | 3  |       |               |               |      |          |
| 8  | 3  |       |               |               |      |          |
| 9  | 3  |       |               |               |      |          |
| 10 | 3  |       |               |               |      |          |
| 11 | 3  |       |               |               |      |          |
| 12 | 3  |       |               |               |      |          |
| 1  | 3  |       |               |               |      |          |
| 2  | 3  |       |               |               |      |          |
| 3  | 3  |       |               |               |      |          |
| 4  | 3  |       |               |               |      |          |
| 5  | 3  |       |               |               |      |          |
| 6  | 3  |       |               |               |      |          |
| 7  | 3  |       |               |               |      |          |
| 8  | 3  |       |               |               |      |          |
| 9  | 3  |       |               |               |      |          |
| 10 | 3  |       |               |               |      |          |
| 11 | 3  |       |               |               |      |          |
| 12 | 3  |       |               |               |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses.      | Winds.        | Lee. | Remarks. |
|----|----|-------|---------------|---------------|------|----------|
| 1  | 3  |       | <i>W. 100</i> | <i>W. 100</i> |      |          |
| 2  | 3  |       |               |               |      |          |
| 3  | 3  |       |               |               |      |          |
| 4  | 3  |       |               |               |      |          |
| 5  | 3  |       |               |               |      |          |
| 6  | 3  |       |               |               |      |          |
| 7  | 3  |       |               |               |      |          |
| 8  | 3  |       |               |               |      |          |
| 9  | 3  |       |               |               |      |          |
| 10 | 3  |       |               |               |      |          |
| 11 | 3  |       |               |               |      |          |
| 12 | 3  |       |               |               |      |          |
| 1  | 3  |       |               |               |      |          |
| 2  | 3  |       |               |               |      |          |
| 3  | 3  |       |               |               |      |          |
| 4  | 3  |       |               |               |      |          |
| 5  | 3  |       |               |               |      |          |
| 6  | 3  |       |               |               |      |          |
| 7  | 3  |       |               |               |      |          |
| 8  | 3  |       |               |               |      |          |
| 9  | 3  |       |               |               |      |          |
| 10 | 3  |       |               |               |      |          |
| 11 | 3  |       |               |               |      |          |
| 12 | 3  |       |               |               |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



from

towards

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks.     |
|----|----|------|----------|--------|------|--------------|
| 1  | 3  |      | 10/4     | 1/2    |      |              |
| 2  | 4  |      |          |        |      | ... with ... |
| 3  | 4  |      |          |        |      | ... with ... |
| 4  | 4  |      |          |        |      | ... with ... |
| 5  | 4  |      |          |        |      | ... with ... |
| 6  | 4  |      |          |        |      | ... with ... |
| 7  | 4  |      |          |        |      | ... with ... |
| 8  | 4  |      |          |        |      | ... with ... |
| 9  | 4  |      |          |        |      | ... with ... |
| 10 | 4  |      |          |        |      | ... with ... |
| 11 | 4  |      |          |        |      | ... with ... |
| 12 | 4  |      |          |        |      | ... with ... |
| 1  | 4  | 1    |          |        |      | ... with ... |
| 2  | 4  | 1    |          |        |      | ... with ... |
| 3  | 4  | 1    |          |        |      | ... with ... |
| 4  | 4  | 1    |          |        |      | ... with ... |
| 5  | 4  | 1    |          |        |      | ... with ... |
| 6  | 4  | 1    |          |        |      | ... with ... |
| 7  | 4  | 1    |          |        |      | ... with ... |
| 8  | 4  | 1    |          |        |      | ... with ... |
| 9  | 4  | 1    |          |        |      | ... with ... |
| 10 | 4  | 1    |          |        |      | ... with ... |
| 11 | 4  | 1    |          |        |      | ... with ... |
| 12 | 4  | 1    |          |        |      | ... with ... |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |

| H. | R. | H.K. | Courses. | Winds. | Lec. | Remarks.     |
|----|----|------|----------|--------|------|--------------|
| 1  | 4  |      | 10/4     | 1/2    |      |              |
| 2  | 4  |      |          |        |      | ... with ... |
| 3  | 4  |      |          |        |      | ... with ... |
| 4  | 4  |      |          |        |      | ... with ... |
| 5  | 4  | 1    |          |        |      | ... with ... |
| 6  | 4  | 1    |          |        |      | ... with ... |
| 7  | 4  | 1    |          |        |      | ... with ... |
| 8  | 4  | 1    |          |        |      | ... with ... |
| 9  | 4  | 1    |          |        |      | ... with ... |
| 10 | 4  | 1    |          |        |      | ... with ... |
| 11 | 4  | 1    |          |        |      | ... with ... |
| 12 | 4  | 1    |          |        |      | ... with ... |
| 1  | 4  | 1    |          |        |      | ... with ... |
| 2  | 4  | 1    |          |        |      | ... with ... |
| 3  | 4  | 1    |          |        |      | ... with ... |
| 4  | 4  | 1    |          |        |      | ... with ... |
| 5  | 4  | 1    |          |        |      | ... with ... |
| 6  | 4  | 1    |          |        |      | ... with ... |
| 7  | 4  | 1    |          |        |      | ... with ... |
| 8  | 4  | 1    |          |        |      | ... with ... |
| 9  | 4  | 1    |          |        |      | ... with ... |
| 10 | 4  | 1    |          |        |      | ... with ... |
| 11 | 4  | 1    |          |        |      | ... with ... |
| 12 | 4  | 1    |          |        |      | ... with ... |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |



|         |    | from  |          | towards    |      |               |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               |             |        |             |           |              |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       |    |       |          |            |      |               |             |        |             |           |              |
| 5       |    |       |          |            |      |               |             |        |             |           |              |
| 6       |    |       |          |            |      |               |             |        |             |           |              |
| 7       |    |       |          |            |      |               |             |        |             |           |              |
| 8       |    |       |          |            |      |               |             |        |             |           |              |
| 9       |    |       |          |            |      |               |             |        |             |           |              |
| 10      |    |       |          |            |      |               |             |        |             |           |              |
| 11      |    |       |          |            |      |               |             |        |             |           |              |
| 12      |    |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               |             |        |             |           |              |



from *North* towards *South*

| H. | K. | H.K. | Courses.        | Winds.          | Lee. | Remarks.            |
|----|----|------|-----------------|-----------------|------|---------------------|
| 1  | 1  |      | <i>N. by E.</i> | <i>S. by E.</i> |      |                     |
| 2  | 1  |      |                 |                 |      | <i>... with ...</i> |
| 3  | 1  |      |                 |                 |      |                     |
| 4  | 1  |      |                 |                 |      | <i>... ..</i>       |
| 5  | 1  |      |                 |                 |      |                     |
| 6  | 1  |      |                 |                 |      |                     |
| 7  | 1  |      |                 |                 |      | <i>... ..</i>       |
| 8  | 1  |      |                 |                 |      |                     |
| 9  | 1  |      |                 |                 |      | <i>... ..</i>       |
| 10 | 1  |      |                 |                 |      |                     |
| 11 | 1  |      |                 |                 |      | <i>... ..</i>       |
| 12 | 1  |      |                 |                 |      |                     |
| 1  | 1  |      |                 |                 |      | <i>... ..</i>       |
| 2  | 1  |      |                 |                 |      |                     |
| 3  | 1  |      |                 |                 |      |                     |
| 4  | 1  |      |                 |                 |      |                     |
| 5  | 1  |      |                 |                 |      | <i>... ..</i>       |
| 6  | 1  |      |                 |                 |      |                     |
| 7  | 1  |      |                 |                 |      | <i>... ..</i>       |
| 8  | 1  |      |                 |                 |      |                     |
| 9  | 1  |      |                 |                 |      |                     |
| 10 | 1  |      |                 |                 |      | <i>... ..</i>       |
| 11 | 1  |      |                 |                 |      |                     |
| 12 | 1  |      |                 |                 |      | <i>... ..</i>       |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.     | Varin. | Diff. Long. | Long. in. | Long. by Ob.    |
|----------|-------|------------|------|---------------|-----------------|--------|-------------|-----------|-----------------|
|          |       |            |      |               | <i>16°30'3"</i> |        |             |           | <i>17°28'2"</i> |

| H. | R. | H.K. | Courses.        | Winds.          | Lee. | Remarks.      |
|----|----|------|-----------------|-----------------|------|---------------|
| 1  | 1  |      | <i>N. by E.</i> | <i>S. by E.</i> |      |               |
| 2  | 1  |      |                 |                 |      | <i>... ..</i> |
| 3  | 1  |      |                 |                 |      |               |
| 4  | 1  |      |                 |                 |      | <i>... ..</i> |
| 5  | 1  |      |                 |                 |      |               |
| 6  | 1  |      |                 |                 |      | <i>... ..</i> |
| 7  | 1  |      |                 |                 |      |               |
| 8  | 1  |      |                 |                 |      | <i>... ..</i> |
| 9  | 1  |      |                 |                 |      |               |
| 10 | 1  |      |                 |                 |      | <i>... ..</i> |
| 11 | 1  |      |                 |                 |      |               |
| 12 | 1  |      |                 |                 |      | <i>... ..</i> |
| 1  | 1  |      |                 |                 |      | <i>... ..</i> |
| 2  | 1  |      |                 |                 |      |               |
| 3  | 1  |      |                 |                 |      |               |
| 4  | 1  |      |                 |                 |      | <i>... ..</i> |
| 5  | 1  |      |                 |                 |      |               |
| 6  | 1  |      |                 |                 |      | <i>... ..</i> |
| 7  | 1  |      |                 |                 |      |               |
| 8  | 1  |      |                 |                 |      | <i>... ..</i> |
| 9  | 1  |      |                 |                 |      |               |
| 10 | 1  |      |                 |                 |      | <i>... ..</i> |
| 11 | 1  |      |                 |                 |      |               |
| 12 | 1  |      |                 |                 |      | <i>... ..</i> |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.     | Varin. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-----------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | <i>16°30'2"</i> |        |             |           |              |



Ship the Hook, from *Alma* towards the *S. E.*

| II. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|-----|----|-------|----------|--------|------|----------|
| 1   |    |       |          |        |      |          |
| 2   |    |       |          |        |      |          |
| 3   | 1  |       |          |        |      |          |
| 4   | 7  | 1     |          |        |      |          |
| 5   | 1  | 1     |          |        |      |          |
| 6   | 1  | 1     |          |        |      |          |
| 7   | 1  | 1     |          |        |      |          |
| 8   | 1  | 1     |          |        |      |          |
| 9   | 1  |       |          |        |      |          |
| 10  |    |       |          |        |      |          |
| 11  |    |       |          |        |      |          |
| 12  |    |       |          |        |      |          |
| 1   | 1  |       |          |        |      |          |
| 2   | 1  |       |          |        |      |          |
| 3   | 1  |       |          |        |      |          |
| 4   | 1  |       |          |        |      |          |
| 5   | 1  |       |          |        |      |          |
| 6   | 1  |       |          |        |      |          |
| 7   | 1  |       |          |        |      |          |
| 8   | 1  |       |          |        |      |          |
| 9   | 1  |       |          |        |      |          |
| 10  | 1  |       |          |        |      |          |
| 11  | 1  |       |          |        |      |          |
| 12  | 1  |       |          |        |      |          |

| Coups. | Lat. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|--------|------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|        |      |            |      |               | 1. 7. 47    |        |             |           | 1. 2. 6      |

| 11. | R. | W.L. | Courses. | Winds. | Lee. | Remarks.                            |
|-----|----|------|----------|--------|------|-------------------------------------|
| 1   | 6  |      | 100      | East   |      | Monday morning 1 <sup>st</sup> Feb. |
| 2   | 7  |      |          |        |      |                                     |
| 3   | 1  | 1    |          |        |      | Remained at anchor, no              |
| 4   | 1  |      |          |        |      | business.                           |
| 5   | 1  |      |          |        |      | Weather open & calm                 |
| 6   | 1  |      |          |        |      |                                     |
| 7   | 1  |      |          |        |      |                                     |
| 8   | 1  |      |          |        |      |                                     |
| 9   | 1  |      |          |        |      | Light & calm, fine day              |
| 10  | 1  |      |          |        |      |                                     |
| 11  | 1  |      |          |        |      |                                     |
| 12  | 1  |      |          |        |      |                                     |
| 1   | 0  |      |          | East   |      | Left at 10 AM, wind                 |
| 2   | 1  |      |          |        |      | Remained in the harbor, light       |
| 3   | 5  |      |          | East   |      | and steady wind                     |
| 4   | 8  |      |          |        |      | and the rain                        |
| 5   | 5  |      |          |        |      |                                     |
| 6   | 1  |      |          |        |      |                                     |
| 7   | 1  |      |          |        |      |                                     |
| 8   | 1  |      |          |        |      |                                     |
| 9   | 1  | 1    |          |        |      | Cloud with great haze & fine        |
| 10  | 1  | 1    |          |        |      | weather                             |
| 11  | 1  | 1    |          |        |      |                                     |
| 12  | 1  | 1    |          |        |      |                                     |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long by Ob. |
|---------|-------|------------|------|--------------|-------------|--------|-------------|-----------|-------------|
|         |       |            |      |              | 17° 00' N   |        |             |           | 100° 00' W  |



Ship *the Viking* from *Hawaii* towards *New York*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                     |
|----|----|------|----------|--------|------|------------------------------|
| 1  | 0  |      | Ship     | SE     |      |                              |
| 2  | 0  |      |          |        |      |                              |
| 3  | 0  |      |          |        |      | Proceed with moderate Trades |
| 4  | 0  |      |          |        |      | pleasant weather             |
| 5  | 0  | 1    |          |        |      |                              |
| 6  | 0  | 1    |          |        |      |                              |
| 7  | 0  | 1    |          |        |      |                              |
| 8  | 0  | 1    |          |        |      |                              |
| 9  | 0  | 1    |          |        |      |                              |
| 10 | 0  | 1    |          |        |      | Midnight light Trades        |
| 11 | 0  | 1    |          |        |      | pleasant weather             |
| 12 | 0  | 1    |          |        |      |                              |
| 1  | 1  | 1    |          |        |      |                              |
| 2  | 1  | 1    |          |        |      | Small black in sight         |
| 3  | 1  | 1    |          |        |      |                              |
| 4  | 1  | 1    |          |        |      |                              |
| 5  | 1  | 1    |          |        |      |                              |
| 6  | 1  | 1    |          |        |      |                              |
| 7  | 1  | 1    |          |        |      |                              |
| 8  | 1  | 1    |          |        |      |                              |
| 9  | 1  | 1    |          |        |      |                              |
| 10 | 1  | 1    |          |        |      |                              |
| 11 | 1  | 1    |          |        |      |                              |
| 12 | 1  | 1    |          |        |      |                              |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 2° 16' N    |        |             |           | 157° 16'     |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                                |
|----|----|------|----------|--------|------|---|
| 1  | 4  |      | SE       | SE     |      |   |
| 2  | 4  |      |          |        |      | Proceed with the breeze                 |
| 3  | 4  |      |          |        |      |   |
| 4  | 4  |      |          |        |      | pleasant weather - the evening sail set |
| 5  | 4  |      |          |        |      |   |
| 6  | 4  |      |          |        |      |   |
| 7  | 4  | 1    |          |        |      |   |
| 8  | 4  | 1    |          |        |      | At 11 AM - the light - the              |
| 9  | 4  | 1    | Hawaii   |        |      | Ship (the sailing) today                |
| 10 | 4  | 1    | SE       |        |      | At 1 PM - the light - the               |
| 11 | 4  | 1    | SE       |        |      | At 2 PM - the light - the               |
| 12 | 4  | 1    | SE       |        |      | At 3 PM - the light - the               |
| 1  | 6  |      | SE       |        |      | At 4 PM - the light - the               |
| 2  | 6  |      | SE       |        |      | At 5 PM - the light - the               |
| 3  | 6  |      | SE       |        |      | At 6 PM - the light - the               |
| 4  | 6  |      | SE       |        |      | At 7 PM - the light - the               |
| 5  | 6  | 1    | SE       |        |      | At 8 PM - the light - the               |
| 6  | 6  | 1    | SE       |        |      | At 9 PM - the light - the               |
| 7  | 6  | 1    | SE       |        |      | At 10 PM - the light - the              |
| 8  | 6  | 1    | SE       |        |      | At 11 PM - the light - the              |
| 9  | 6  | 1    | SE       |        |      | At 12 PM - the light - the              |
| 10 | 6  | 1    | SE       |        |      | At 1 PM - the light - the               |
| 11 | 6  | 1    | SE       |        |      | At 2 PM - the light - the               |
| 12 | 6  | 1    | SE       |        |      | At 3 PM - the light - the               |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 2° 33' N    |        |             |           | 157° 16'     |



Ship *Howe* sailing from *St. Louis* towards *Panama*

| H.       | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. | This day from Sept. 1846 |           |              |         |  |
|----------|-------|------------|----------|---------------|-------------|----------|--------------------------|-----------|--------------|---------|--|
| 1        | 7     |            | 4th      | SE            |             |          |                          |           |              |         |  |
| 2        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 3        | 8     |            |          |               |             |          |                          |           |              |         |  |
| 4        | 8     |            |          |               |             |          |                          |           |              |         |  |
| 5        | 8     |            |          |               |             |          |                          |           |              |         |  |
| 6        | 8     | 1          | 4th      | SE            |             |          |                          |           |              |         |  |
| 7        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 8        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 9        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 10       | 1     |            |          |               |             |          |                          |           |              |         |  |
| 11       | 1     |            |          |               |             |          |                          |           |              |         |  |
| 12       | 1     |            |          |               |             |          |                          |           |              |         |  |
| 1        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 2        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 3        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 4        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 5        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 6        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 7        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 8        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 9        | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| 10       | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| 11       | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| 12       | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| Courses. | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long.              | Long. in. | Long. by Ob. |         |  |
|          |       |            |          |               | 20° 15'     |          |                          |           |              | 40° 15' |  |

| H.       | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. | This day from Sept. 1846 |           |              |         |  |
|----------|-------|------------|----------|---------------|-------------|----------|--------------------------|-----------|--------------|---------|--|
| 1        | 1     | 1          | 4th      | SE            |             |          |                          |           |              |         |  |
| 2        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 3        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 4        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 5        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 6        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 7        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 8        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 9        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 10       | 1     |            |          |               |             |          |                          |           |              |         |  |
| 11       | 1     |            |          |               |             |          |                          |           |              |         |  |
| 12       | 1     |            |          |               |             |          |                          |           |              |         |  |
| 1        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 2        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 3        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 4        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 5        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 6        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 7        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 8        | 1     |            |          |               |             |          |                          |           |              |         |  |
| 9        | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| 10       | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| 11       | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| 12       | 1     | 1          |          |               |             |          |                          |           |              |         |  |
| Courses. | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long.              | Long. in. | Long. by Ob. |         |  |
|          |       |            |          |               | 21° 44' S   |          |                          |           |              | 40° 15' |  |



Ship *Thetis* from *Manila* towards *New York* -

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                               |
|----|----|------|----------|--------|------|--|
| 1  | 2  |      | West     | East   |      | Commenced with a light breeze from the |
| 2  | 3  | /    |          |        |      | Eastward & pleasant weather.           |
| 3  | 4  | /    |          | East   |      |  |
| 4  | 5  | /    |          |        |      |  |
| 5  | 6  | /    |          | East   |      | At 11 - fresh ship shifted on the      |
| 6  | 7  |      |          |        |      | W. & opened studdensail.               |
| 7  | 8  |      |          |        |      |  |
| 8  | 9  |      |          |        |      |  |
| 9  | 10 |      |          |        |      |  |
| 10 | 11 |      |          |        |      |  |
| 11 | 12 |      |          |        |      | Midnight - fresh breeze from           |
| 1  | 2  |      |          |        |      |  |
| 2  | 3  | /    |          |        |      |  |
| 3  | 4  | /    |          |        |      | East with light breeze from            |
| 4  | 5  | /    |          |        |      |  |
| 5  | 6  | /    |          |        |      |  |
| 6  | 7  | /    |          |        |      |  |
| 7  | 8  | /    |          |        |      |  |
| 8  | 9  | /    |          |        |      | Stronger breeze to S. by E. & East     |
| 9  | 10 | /    |          |        |      |  |
| 10 | 11 | /    |          |        |      |  |
| 11 | 12 | /    |          |        |      |  |

| Courses. | Dist. | Dif. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Dif. Long. | Long. in. | Long. by Ob. |
|----------|-------|-----------|------|---------------|-------------|--------|------------|-----------|--------------|
|          |       |           |      |               | 21° 11'     |        |            |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                     |
|----|----|------|----------|--------|------|------------------------------|
| 1  | 2  | /    | West     | East   |      |                              |
| 2  | 3  | /    |          |        |      |                              |
| 3  | 4  | /    |          |        |      |                              |
| 4  | 5  | /    |          |        |      |                              |
| 5  | 6  | /    |          |        |      |                              |
| 6  | 7  | /    |          |        |      |                              |
| 7  | 8  | /    |          |        |      |                              |
| 8  | 9  | /    | West     |        |      |                              |
| 9  | 10 |      |          |        |      | Midnight - light breeze from |
| 10 | 11 |      |          |        |      | at anchor.                   |
| 11 | 12 |      |          |        |      |                              |
| 1  | 2  | /    |          |        |      |                              |
| 2  | 3  | /    |          |        |      |                              |
| 3  | 4  | /    |          |        |      |                              |
| 4  | 5  | /    |          |        |      |                              |
| 5  | 6  | /    |          |        |      |                              |
| 6  | 7  | /    |          |        |      | Light breeze from            |
| 7  | 8  | /    |          |        |      |                              |
| 8  | 9  | /    |          |        |      |                              |
| 9  | 10 | /    |          |        |      |                              |
| 10 | 11 | /    |          |        |      |                              |
| 11 | 12 | /    |          |        |      |                              |

| Courses. | Dist. | Dif. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Dif. Long. | Long. in. | Long. by Ob. |
|----------|-------|-----------|------|---------------|-------------|--------|------------|-----------|--------------|
|          |       |           |      |               | 1° 51'      |        |            |           | 11° 56'      |



*Ship This taking from Manila towards San Francisco*

| H.      | K.    | H. K.      | Courses. | Winds.        | Lce.        | Remarks.     | <i>Monday January 28<sup>th</sup> 1846</i> |           |              |  |  |
|---------|-------|------------|----------|---------------|-------------|--------------|--|-----------|--------------|--|--|
| 1       | 1     |            |          |               |             |              |  |           |              |  |  |
| 2       | 2     |            |          |               |             |              |  |           |              |  |  |
| 3       | 3     |            |          |               |             |              |  |           |              |  |  |
| 4       | 4     |            |          |               |             |              |  |           |              |  |  |
| 5       | 5     |            |          |               |             |              |  |           |              |  |  |
| 6       | 6     | 1          |          |               |             |              |  |           |              |  |  |
| 7       | 7     |            |          |               |             |              |  |           |              |  |  |
| 8       | 8     | 1          |          |               |             |              |  |           |              |  |  |
| 9       | 9     | 1          |          |               |             |              |  |           |              |  |  |
| 10      | 10    | 1          |          |               |             |              |  |           |              |  |  |
| 11      | 11    | 1          |          |               |             |              |  |           |              |  |  |
| 12      | 12    | 1          |          |               |             |              |  |           |              |  |  |
| 1       | 1     | 1          |          |               |             |              |  |           |              |  |  |
| 2       | 2     | 1          |          |               |             |              |  |           |              |  |  |
| 3       | 3     |            |          |               |             |              |  |           |              |  |  |
| 4       | 4     |            |          |               |             |              |  |           |              |  |  |
| 5       | 5     |            |          |               |             |              |  |           |              |  |  |
| 6       | 6     |            |          |               |             |              |  |           |              |  |  |
| 7       | 7     |            |          |               |             |              |  |           |              |  |  |
| 8       | 8     |            |          |               |             |              |  |           |              |  |  |
| 9       | 9     |            |          |               |             |              |  |           |              |  |  |
| 10      | 10    |            |          |               |             |              |  |           |              |  |  |
| 11      | 11    |            |          |               |             |              |  |           |              |  |  |
| 12      | 12    |            |          |               |             |              |  |           |              |  |  |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.       | Diff. Long.                                | Long. in. | Long. by Ob. |  |  |
|         |       |            |          |               |             | 2. 9/8' 1/2" |  |           |              |  |  |

| H.      | K.    | H. K.      | Courses. | Winds.        | Lce.        | Remarks.    | <i>Tuesday January 29<sup>th</sup> 1846</i> |           |              |  |  |
|---------|-------|------------|----------|---------------|-------------|-------------|---|-----------|--------------|--|--|
| 1       | 1     |            |          |               |             |             |   |           |              |  |  |
| 2       | 2     |            |          |               |             |             |   |           |              |  |  |
| 3       | 3     |            |          |               |             |             |   |           |              |  |  |
| 4       | 4     |            |          |               |             |             |   |           |              |  |  |
| 5       | 5     |            |          |               |             |             |   |           |              |  |  |
| 6       | 6     |            |          |               |             |             |   |           |              |  |  |
| 7       | 7     |            |          |               |             |             |   |           |              |  |  |
| 8       | 8     | 1          |          |               |             |             |   |           |              |  |  |
| 9       | 9     |            |          |               |             |             |   |           |              |  |  |
| 10      | 10    |            |          |               |             |             |   |           |              |  |  |
| 11      | 11    |            |          |               |             |             |   |           |              |  |  |
| 12      | 12    |            |          |               |             |             |   |           |              |  |  |
| 1       | 1     |            |          |               |             |             |   |           |              |  |  |
| 2       | 2     |            |          |               |             |             |   |           |              |  |  |
| 3       | 3     |            |          |               |             |             |   |           |              |  |  |
| 4       | 4     |            |          |               |             |             |   |           |              |  |  |
| 5       | 5     | 1          |          |               |             |             |   |           |              |  |  |
| 6       | 6     | 1          |          |               |             |             |   |           |              |  |  |
| 7       | 7     |            |          |               |             |             |   |           |              |  |  |
| 8       | 8     |            |          |               |             |             |   |           |              |  |  |
| 9       | 9     |            |          |               |             |             |   |           |              |  |  |
| 10      | 10    |            |          |               |             |             |   |           |              |  |  |
| 11      | 11    |            |          |               |             |             |   |           |              |  |  |
| 12      | 12    |            |          |               |             |             |   |           |              |  |  |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.      | Diff. Long.                                 | Long. in. | Long. by Ob. |  |  |
|         |       |            |          |               |             | 2. 34' 1/2" |   |           |              |  |  |



*Left the harbor from Manila towards New York*

| 11. | K. | 11.K. | Courses. | Winds. | Lec. | Remarks. |
|-----|----|-------|----------|--------|------|----------|
| 1   |    |       |          |        |      |          |
| 2   |    |       |          |        |      |          |
| 3   |    |       |          |        |      |          |
| 4   |    |       |          |        |      |          |
| 5   |    |       |          |        |      |          |
| 6   |    |       |          |        |      |          |
| 7   |    |       |          |        |      |          |
| 8   |    |       |          |        |      |          |
| 9   |    |       |          |        |      |          |
| 10  |    |       |          |        |      |          |
| 11  |    |       |          |        |      |          |
| 12  |    |       |          |        |      |          |
| 1   |    |       |          |        |      |          |
| 2   |    |       |          |        |      |          |
| 3   |    |       |          |        |      |          |
| 4   |    |       |          |        |      |          |
| 5   |    |       |          |        |      |          |
| 6   |    |       |          |        |      |          |
| 7   |    |       |          |        |      |          |
| 8   |    |       |          |        |      |          |
| 9   |    |       |          |        |      |          |
| 10  |    |       |          |        |      |          |
| 11  |    |       |          |        |      |          |
| 12  |    |       |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Long. | Diff. Long. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|-------|-------------|--------------|
|          |       |            |      |               |             |       |             |              |

| 11. | K. | 11.K. | Courses. | Winds. | Lec. | Remarks. |
|-----|----|-------|----------|--------|------|----------|
| 1   |    |       |          |        |      |          |
| 2   |    |       |          |        |      |          |
| 3   |    |       |          |        |      |          |
| 4   |    |       |          |        |      |          |
| 5   |    |       |          |        |      |          |
| 6   |    |       |          |        |      |          |
| 7   |    |       |          |        |      |          |
| 8   |    |       |          |        |      |          |
| 9   |    |       |          |        |      |          |
| 10  |    |       |          |        |      |          |
| 11  |    |       |          |        |      |          |
| 12  |    |       |          |        |      |          |
| 1   |    |       |          |        |      |          |
| 2   |    |       |          |        |      |          |
| 3   |    |       |          |        |      |          |
| 4   |    |       |          |        |      |          |
| 5   |    |       |          |        |      |          |
| 6   |    |       |          |        |      |          |
| 7   |    |       |          |        |      |          |
| 8   |    |       |          |        |      |          |
| 9   |    |       |          |        |      |          |
| 10  |    |       |          |        |      |          |
| 11  |    |       |          |        |      |          |
| 12  |    |       |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Long. | Diff. Long. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|-------|-------------|--------------|
|          |       |            |      |               |             |       |             |              |



Ship the *Albatross* from *Hamble* towards *San Diego*

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      | Friday January 30 <sup>th</sup> 1846 |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|--------------------------------------|--------|-------------|-----------|--------------|
| 1       |    |       |          |            |      |               |                                      |        |             |           |              |
| 2       |    |       |          |            |      |               |                                      |        |             |           |              |
| 3       |    |       |          |            |      |               |                                      |        |             |           |              |
| 4       |    |       |          |            |      |               |                                      |        |             |           |              |
| 5       |    |       |          |            |      |               |                                      |        |             |           |              |
| 6       |    |       |          |            |      |               |                                      |        |             |           |              |
| 7       |    |       |          |            |      |               |                                      |        |             |           |              |
| 8       |    |       |          |            |      |               |                                      |        |             |           |              |
| 9       |    |       |          |            |      |               |                                      |        |             |           |              |
| 10      |    |       |          |            |      |               |                                      |        |             |           |              |
| 11      |    |       |          |            |      |               |                                      |        |             |           |              |
| 12      |    |       |          |            |      |               |                                      |        |             |           |              |
| 1       |    |       |          |            |      |               |                                      |        |             |           |              |
| 2       |    |       |          |            |      |               |                                      |        |             |           |              |
| 3       |    |       |          |            |      |               |                                      |        |             |           |              |
| 4       |    |       |          |            |      |               |                                      |        |             |           |              |
| 5       |    |       |          |            |      |               |                                      |        |             |           |              |
| 6       |    |       |          |            |      |               |                                      |        |             |           |              |
| 7       |    |       |          |            |      |               |                                      |        |             |           |              |
| 8       |    |       |          |            |      |               |                                      |        |             |           |              |
| 9       |    |       |          |            |      |               |                                      |        |             |           |              |
| 10      |    |       |          |            |      |               |                                      |        |             |           |              |
| 11      |    |       |          |            |      |               |                                      |        |             |           |              |
| 12      |    |       |          |            |      |               |                                      |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.                          | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               | 22° 45' 12"                          |        |             |           |              |

| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       |    |       |          |            |      |               |             |        |             |           |              |
| 3       |    |       |          |            |      |               |             |        |             |           |              |
| 4       | 2  | 1     |          |            |      |               |             |        |             |           |              |
| 5       | 2  |       |          |            |      |               |             |        |             |           |              |
| 6       | 2  |       |          |            |      |               |             |        |             |           |              |
| 7       | 2  |       |          |            |      |               |             |        |             |           |              |
| 8       | 2  |       |          |            |      |               |             |        |             |           |              |
| 9       | 2  | 1     |          |            |      |               |             |        |             |           |              |
| 10      | 2  | 2     |          |            |      |               |             |        |             |           |              |
| 11      | 2  | 2     |          |            |      |               |             |        |             |           |              |
| 12      | 2  | 1     |          |            |      |               |             |        |             |           |              |
| 1       |    |       |          |            |      |               |             |        |             |           |              |
| 2       | 2  |       |          |            |      |               |             |        |             |           |              |
| 3       | 2  |       |          |            |      |               |             |        |             |           |              |
| 4       | 2  |       |          |            |      |               |             |        |             |           |              |
| 5       | 2  |       |          |            |      |               |             |        |             |           |              |
| 6       | 2  |       |          |            |      |               |             |        |             |           |              |
| 7       | 2  |       |          |            |      |               |             |        |             |           |              |
| 8       | 2  |       |          |            |      |               |             |        |             |           |              |
| 9       | 2  |       |          |            |      |               |             |        |             |           |              |
| 10      | 2  |       |          |            |      |               |             |        |             |           |              |
| 11      | 2  |       |          |            |      |               |             |        |             |           |              |
| 12      | 2  |       |          |            |      |               |             |        |             |           |              |
| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |       |          |            |      |               | 22° 45' 12" |        |             |           |              |



from *San Francisco* towards *San Jose*

| H. | K. | H.K. | Courses.        | Winds.       | Lee. | Remarks. |
|----|----|------|-----------------|--------------|------|----------|
| 1  |    |      | <i>W. 1/2 S</i> | <i>1/2 E</i> |      |          |
| 2  |    |      |                 |              |      |          |
| 3  |    |      |                 |              |      |          |
| 4  |    |      |                 |              |      |          |
| 5  |    | 1    |                 |              |      |          |
| 6  |    | 1    |                 |              |      |          |
| 7  |    |      |                 |              |      |          |
| 8  |    |      |                 |              |      |          |
| 9  |    | 1    |                 |              |      |          |
| 10 |    |      |                 |              |      |          |
| 11 | 4  |      |                 |              |      |          |
| 12 |    | 1    |                 |              |      |          |
| 1  | 5  |      |                 |              |      |          |
| 2  | 4  |      |                 |              |      |          |
| 3  | 4  |      |                 |              |      |          |
| 4  | 5  |      |                 |              |      |          |
| 5  | 5  |      |                 |              |      |          |
| 6  | 4  |      | <i>W. 1/2 S</i> |              |      |          |
| 7  | 4  |      |                 |              |      |          |
| 8  | 5  |      | <i>W. 1/2 S</i> |              |      |          |
| 9  | 5  |      |                 |              |      |          |
| 10 | 5  |      |                 |              |      |          |
| 11 | 5  |      |                 |              |      |          |
| 12 | 5  |      |                 |              |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.    | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|----------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | <i>23° 15'</i> |        |             |           |              |

| H. | K. | H.K. | Courses.        | Winds.          | Lee. | Remarks. |
|----|----|------|-----------------|-----------------|------|----------|
| 1  | 6  |      | <i>W. 1/2 S</i> | <i>1/2 E</i>    |      |          |
| 2  | 6  |      |                 |                 |      |          |
| 3  | 6  |      |                 |                 |      |          |
| 4  | 6  | 1    |                 |                 |      |          |
| 5  | 7  |      |                 |                 |      |          |
| 6  | 7  |      |                 |                 |      |          |
| 7  | 7  |      |                 |                 |      |          |
| 8  | 7  |      |                 |                 |      |          |
| 9  | 8  |      |                 |                 |      |          |
| 10 | 8  |      | <i>W. 1/2 S</i> |                 |      |          |
| 11 | 8  |      |                 |                 |      |          |
| 12 | 8  |      |                 |                 |      |          |
| 1  | 8  |      |                 |                 |      |          |
| 2  | 8  |      |                 | <i>W. 1/2 S</i> |      |          |
| 3  | 8  |      |                 |                 |      |          |
| 4  | 8  |      |                 |                 |      |          |
| 5  | 8  |      |                 |                 |      |          |
| 6  | 8  |      |                 |                 |      |          |
| 7  | 8  |      |                 |                 |      |          |
| 8  | 8  |      |                 |                 |      |          |
| 9  | 8  |      |                 |                 |      |          |
| 10 | 8  |      |                 |                 |      |          |
| 11 | 4  |      | <i>W. 1/2 S</i> |                 |      |          |
| 12 | 8  |      |                 |                 |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.    | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|----------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | <i>23° 15'</i> |        |             |           |              |



Life then takes us from  $\cdot W$  north towards  $\cdot S$  &  $\cdot E$  -

| H. | K. | II. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|--------|----------|--------|------|----------|
| 1  |    |        |          |        |      | ... ..   |
| 2  | 5  |        |          |        |      | ... ..   |
| 3  |    |        |          |        |      | ... ..   |
| 4  |    |        |          |        |      | ... ..   |
| 5  |    |        |          |        |      | ... ..   |
| 6  | 5  |        |          |        |      | ... ..   |
| 7  |    |        |          |        |      | ... ..   |
| 8  | 6  | 1      |          |        |      | ... ..   |
| 9  |    |        |          |        |      | ... ..   |
| 10 |    |        |          |        |      | ... ..   |
| 11 |    |        |          |        |      | ... ..   |
| 12 |    |        |          |        |      | ... ..   |
| 1  |    |        |          |        |      | ... ..   |
| 2  | 6  |        |          |        |      | ... ..   |
| 3  |    | 1      |          |        |      | ... ..   |
| 4  |    | 1      |          |        |      | ... ..   |
| 5  |    |        |          |        |      | ... ..   |
| 6  |    |        |          |        |      | ... ..   |
| 7  |    |        |          |        |      | ... ..   |
| 8  |    |        |          |        |      | ... ..   |
| 9  |    |        |          |        |      | ... ..   |
| 10 |    |        |          |        |      | ... ..   |
| 11 |    |        |          |        |      | ... ..   |
| 12 |    |        |          |        |      | ... ..   |

| H. | K. | H. K. | Courses. | Winds. | Lec.       | Remarks.                                 |              |             |        |             |           |               |
|----|----|-------|----------|--------|------------|--|--------------|-------------|--------|-------------|-----------|---------------|
| 1  | /  |       |          |        |            | 1st day - February 4 <sup>th</sup> 1846- |              |             |        |             |           |               |
| 2  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 3  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 4  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 5  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 6  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 7  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 8  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 9  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 10 |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 11 |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 12 |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 1  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 2  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 3  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 4  | /  |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 5  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 6  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 7  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 8  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 9  |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 10 |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 11 |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
| 12 |    |       |          |        |            | " " " " " " " " " "                      |              |             |        |             |           |               |
|    |    |       | Course.  | Dist.  | Diff. lat. | Dep.                                     | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Obs. |
|    |    |       |          |        |            |  |              | 24 30'      |        |             |           | 25 55'        |



Ship the *Union* from *Proville* towards *New York* -

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  | 1  |      |          |        |      |          |
| 5  | 1  |      |          |        |      |          |
| 6  | 1  |      |          |        |      |          |
| 7  | 1  |      |          |        |      |          |
| 8  | 1  |      |          |        |      |          |
| 9  | 1  |      |          |        |      |          |
| 10 | 1  |      |          |        |      |          |
| 11 | 1  |      |          |        |      |          |
| 12 | 1  |      |          |        |      |          |
| 1  | 2  |      |          |        |      |          |
| 2  | 2  |      |          |        |      |          |
| 3  | 2  | 1    |          |        |      |          |
| 4  | 2  | 1    |          |        |      |          |
| 5  | 2  | 1    |          |        |      |          |
| 6  | 2  | 1    |          |        |      |          |
| 7  | 2  | 1    |          |        |      |          |
| 8  | 2  |      |          |        |      |          |
| 9  | 2  |      |          |        |      |          |
| 10 | 2  |      |          |        |      |          |
| 11 | 2  |      |          |        |      |          |
| 12 | 2  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 25° 15' S   |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 4  |      |          |        |      |          |
| 2  | 4  |      |          |        |      |          |
| 3  | 4  |      |          |        |      |          |
| 4  | 4  | 1    |          |        |      |          |
| 5  | 5  |      |          |        |      |          |
| 6  | 6  |      |          |        |      |          |
| 7  | 6  | 1    |          |        |      |          |
| 8  | 6  | 1    |          |        |      |          |
| 9  | 6  | 1    |          |        |      |          |
| 10 | 6  | 1    |          |        |      |          |
| 11 | 6  |      |          |        |      |          |
| 12 | 6  |      |          |        |      |          |
| 1  | 8  |      |          |        |      |          |
| 2  | 8  |      |          |        |      |          |
| 3  | 8  |      |          |        |      |          |
| 4  | 8  |      |          |        |      |          |
| 5  | 8  | 1    |          |        |      |          |
| 6  | 8  | 1    |          |        |      |          |
| 7  | 4  | 1    |          |        |      |          |
| 8  | 4  | 1    |          |        |      |          |
| 9  | 4  |      |          |        |      |          |
| 10 | 6  |      |          |        |      |          |
| 11 | 6  |      |          |        |      |          |
| 12 | 6  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 28° 35' S   |        |             |           |              |



Ship the *King* from *W. M. L.* towards *the Gulf*

H. K. H. K. Courses. Winds. Lee. Remarks. *Saturday - February 7<sup>th</sup> 1846 -*

|    |   |   |       |    |  |  |
|----|---|---|-------|----|--|--|
| 1  | 4 | 1 | Light | SE |  |  |
| 2  | 4 | 1 |       |    |  | Commenced with good breeze & pleasant      |
| 3  | 4 | 1 |       |    |  | the  |
| 4  | 4 | 1 |       |    |  |  |
| 5  | 4 | 1 |       |    |  |  |
| 6  | 4 | 1 |       | SE |  | Still ship shifted on the star             |
| 7  | 4 | 1 |       |    |  | board                                      |
| 8  | 4 | 1 |       |    |  |  |
| 9  | 4 | 1 |       |    |  |  |
| 10 | 4 | 1 |       |    |  |  |
| 11 | 4 | 1 |       |    |  | Through the night fine breeze & pleasant - |
| 12 | 4 | 1 |       | SE |  |  |
| 1  | 4 | 1 |       |    |  | 12.30. Ship shifted on sudden sail -       |
| 2  | 4 | 1 |       |    |  | still in air sea sudden sail -             |
| 3  | 4 | 1 |       |    |  |  |
| 4  | 4 | 1 |       |    |  |  |
| 5  | 4 | 1 |       |    |  |  |
| 6  | 4 | 1 |       |    |  | End with good breeze & pleasant sea        |
| 7  | 4 | 1 |       |    |  | the  |
| 8  | 4 | 1 |       |    |  |  |
| 9  | 4 | 1 |       |    |  |  |
| 10 | 4 | 1 |       |    |  |  |
| 11 | 4 | 1 |       |    |  |  |
| 12 | 4 | 1 |       |    |  | Latitude for 11.00 a.m. 46° 20' East       |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|--------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |              | 46° 20'     |        |             |           |              |

H. K. H. K. Courses. Winds. Lee. Remarks. *Sunday - February 8<sup>th</sup> 1846 -*

|    |   |   |       |    |  |  |
|----|---|---|-------|----|--|--|
| 1  | 4 | 1 | Light | SE |  |  |
| 2  | 4 | 1 |       |    |  | Commenced with good breeze & pleasant      |
| 3  | 4 | 1 |       | SE |  | the  |
| 4  | 4 | 1 |       |    |  |  |
| 5  | 4 | 1 |       |    |  |  |
| 6  | 4 | 1 |       | SE |  | Still ship shifted on the star             |
| 7  | 4 | 1 |       |    |  | board                                      |
| 8  | 4 | 1 |       |    |  |  |
| 9  | 4 | 1 |       |    |  |  |
| 10 | 4 | 1 |       |    |  |  |
| 11 | 4 | 1 |       |    |  | Through the night fine breeze & pleasant - |
| 12 | 4 | 1 |       | SE |  |  |
| 1  | 4 | 1 |       |    |  | 12.30. Ship shifted on sudden sail -       |
| 2  | 4 | 1 |       |    |  | still in air sea sudden sail -             |
| 3  | 4 | 1 |       |    |  |  |
| 4  | 4 | 1 |       |    |  |  |
| 5  | 4 | 1 |       |    |  | End with good breeze & pleasant sea        |
| 6  | 4 | 1 |       |    |  | the  |
| 7  | 4 | 1 |       |    |  |  |
| 8  | 4 | 1 |       |    |  |  |
| 9  | 4 | 1 |       |    |  |  |
| 10 | 4 | 1 |       |    |  |  |
| 11 | 4 | 1 |       |    |  |  |
| 12 | 4 | 1 |       |    |  | Latitude for 11.00 a.m. 46° 20' East       |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|--------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |              | 46° 20'     |        |             |           |              |



Left New York from *Hamlet* towards *San Francisco*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



Ship *Star* sailing from *London* towards *San Pedro*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 1  | 1     |          |        |      |          |
| 2  | 1  | 1     |          |        |      |          |
| 3  | 1  | 1     |          |        |      |          |
| 4  | 1  | 1     |          |        |      |          |
| 5  | 1  | 1     |          |        |      |          |
| 6  | 1  | 1     |          |        |      |          |
| 7  | 1  | 1     |          |        |      |          |
| 8  | 1  | 1     |          |        |      |          |
| 9  | 1  | 1     |          |        |      |          |
| 10 | 1  | 1     |          |        |      |          |
| 11 | 1  | 1     |          |        |      |          |
| 12 | 1  | 1     |          |        |      |          |
| 1  | 1  | 1     |          |        |      |          |
| 2  | 1  | 1     |          |        |      |          |
| 3  | 1  | 1     |          |        |      |          |
| 4  | 1  | 1     |          |        |      |          |
| 5  | 1  | 1     |          |        |      |          |
| 6  | 1  | 1     |          |        |      |          |
| 7  | 1  | 1     |          |        |      |          |
| 8  | 1  | 1     |          |        |      |          |
| 9  | 1  | 1     |          |        |      |          |
| 10 | 1  | 1     |          |        |      |          |
| 11 | 1  | 1     |          |        |      |          |
| 12 | 1  | 1     |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 1  | 1     |          |        |      |          |
| 2  | 1  | 1     |          |        |      |          |
| 3  | 1  | 1     |          |        |      |          |
| 4  | 1  | 1     |          |        |      |          |
| 5  | 1  | 1     |          |        |      |          |
| 6  | 1  | 1     |          |        |      |          |
| 7  | 1  | 1     |          |        |      |          |
| 8  | 1  | 1     |          |        |      |          |
| 9  | 1  | 1     |          |        |      |          |
| 10 | 1  | 1     |          |        |      |          |
| 11 | 1  | 1     |          |        |      |          |
| 12 | 1  | 1     |          |        |      |          |
| 1  | 1  | 1     |          |        |      |          |
| 2  | 1  | 1     |          |        |      |          |
| 3  | 1  | 1     |          |        |      |          |
| 4  | 1  | 1     |          |        |      |          |
| 5  | 1  | 1     |          |        |      |          |
| 6  | 1  | 1     |          |        |      |          |
| 7  | 1  | 1     |          |        |      |          |
| 8  | 1  | 1     |          |        |      |          |
| 9  | 1  | 1     |          |        |      |          |
| 10 | 1  | 1     |          |        |      |          |
| 11 | 1  | 1     |          |        |      |          |
| 12 | 1  | 1     |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



Ship sailing from Manila towards San Mateo

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                               |
|----|----|------|----------|--------|------|--|
| 1  | 4  |      | W. by N. | light  |      | Commenced with light breeze & pleasant |
| 2  | 4  |      | W. by N. |        |      | weather.                               |
| 3  | 4  |      | W. by N. |        |      |  |
| 4  | 4  |      | W. by N. |        |      |  |
| 5  | 4  |      | W. by N. |        |      | at 10 AM the ship                      |
| 6  | 4  |      | W. by N. |        |      | 3 miles                                |
| 7  | 4  |      | W. by N. |        |      | at 10 AM the ship                      |
| 8  | 4  |      | W. by N. |        |      | at 10 AM the ship                      |
| 9  | 4  |      | W. by N. |        |      | at 10 AM the ship                      |
| 10 | 4  |      | W. by N. |        |      | at 10 AM the ship                      |
| 11 | 4  |      | W. by N. |        |      | at 10 AM the ship                      |
| 12 | 4  |      | W. by N. |        |      | at 10 AM the ship                      |
| 1  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 2  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 3  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 4  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 5  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 6  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 7  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 8  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 9  | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 10 | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 11 | 2  |      | W. by N. |        |      | at 10 AM the ship                      |
| 12 | 2  |      | W. by N. |        |      | at 10 AM the ship                      |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 31° 29' N   |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                         |
|----|----|------|----------|--------|------|----------------------------------|
| 1  | 2  | 1    | W. by N. | East   |      | Commenced with light in from the |
| 2  | 2  | 1    | W. by N. | East   |      | East & pleasant weather.         |
| 3  | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 4  | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 5  | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 6  | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 7  | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 8  | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 9  | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 10 | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 11 | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 12 | 2  | 1    | W. by N. | East   |      | at 10 AM the ship                |
| 1  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 2  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 3  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 4  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 5  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 6  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 7  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 8  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 9  | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 10 | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 11 | 4  |      | W. by N. | East   |      | at 10 AM the ship                |
| 12 | 4  |      | W. by N. | East   |      | at 10 AM the ship                |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 32° 19' N   |        |             |           |              |



| 11. | K. | 11. K. | Courses. | Winds. | Lee. | Remarks.                             |
|-----|----|--------|----------|--------|------|--------------------------------------|
|     |    |        |          |        |      | Sunday February 1 <sup>st</sup> 1846 |

| H. | K. | H. K. | Cours. | Winds. | Ecc. | Remarks. |
|----|----|-------|--------|--------|------|----------|
| 1  | 4  |       | 170    | 4. 10  |      |          |
| 2  | 4  |       |        |        |      |          |
| 3  | 4  |       | 170    | 9. 4   |      |          |
| 4  | 0  |       |        |        |      |          |
| 5  | 1  |       | 170    |        |      |          |
| 6  | 4  |       |        |        |      |          |
| 7  | 2  |       | 170    | 10. 10 |      |          |
| 8  |    |       |        |        |      |          |
| 9  | 1  |       |        |        |      |          |
| 10 | 1  |       |        |        |      |          |
| 11 | 1  |       |        |        |      |          |
| 12 |    |       |        |        |      |          |
| 1  |    |       |        |        |      |          |
| 2  |    |       |        |        |      |          |
| 3  |    |       |        |        |      |          |
| 4  | 2  |       | 170    | 10. 10 |      |          |
| 5  |    |       |        |        |      |          |
| 6  |    |       |        |        |      |          |
| 7  |    |       |        |        |      |          |
| 8  | 1  |       |        |        |      |          |
| 9  |    |       |        |        |      |          |
| 10 |    |       |        |        |      |          |
| 11 |    |       |        |        |      |          |
| 12 | 1  | 1     | 170    | 10. 10 |      |          |

Course.

Lat.

Diff. lat.

Dep.

Lat. by D.R.

Lat. by Ob.

Varia.

Diff. Long.

Long. in.

Long. by Ob.

20° 05' S

20° 15' E



from *London* towards *New York*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                            |
|----|----|------|----------|--------|------|-------------------------------------|
| 1  |    |      |          |        |      | <i>Commenced at 10 o'clock</i>      |
| 2  | 1  |      |          |        |      | <i>fine weather</i>                 |
| 3  | 1  |      |          |        |      |                                     |
| 4  | 1  |      |          |        |      | <i>Ship's crew &amp; passengers</i> |
| 5  | 1  |      |          |        |      | <i>at 10 o'clock</i>                |
| 6  | 1  |      |          |        |      |                                     |
| 7  | 1  |      |          |        |      | <i>at 11 o'clock</i>                |
| 8  | 1  |      |          |        |      | <i>at 12 o'clock</i>                |
| 9  | 1  | 1    |          |        |      |                                     |
| 10 | 1  |      |          |        |      | <i>at 1 o'clock</i>                 |
| 11 | 1  |      |          |        |      | <i>at 2 o'clock</i>                 |
| 12 | 1  |      |          |        |      | <i>at 3 o'clock</i>                 |
| 1  | 2  | 1    |          |        |      | <i>at 4 o'clock</i>                 |
| 2  | 2  | 1    |          |        |      | <i>at 5 o'clock</i>                 |
| 3  | 2  | 1    |          |        |      | <i>at 6 o'clock</i>                 |
| 4  | 2  | 1    |          |        |      | <i>at 7 o'clock</i>                 |
| 5  | 2  | 1    |          |        |      | <i>at 8 o'clock</i>                 |
| 6  | 2  | 1    |          |        |      | <i>at 9 o'clock</i>                 |
| 7  | 2  | 1    |          |        |      | <i>at 10 o'clock</i>                |
| 8  | 2  | 1    |          |        |      | <i>at 11 o'clock</i>                |
| 9  | 2  | 1    |          |        |      | <i>at 12 o'clock</i>                |
| 10 | 2  | 1    |          |        |      | <i>at 1 o'clock</i>                 |
| 11 | 2  | 1    |          |        |      | <i>at 2 o'clock</i>                 |
| 12 | 2  | 1    |          |        |      | <i>at 3 o'clock</i>                 |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long. by Ob.     |
|---------|-------|------------|------|---------------|------------------|--------|-------------|-----------|------------------|
|         |       |            |      |               | <i>10° 30' N</i> |        |             |           | <i>17° 30' E</i> |

| H. | K. | H.K. | Courses.             | Winds. | Lee. | Remarks.                            |
|----|----|------|----------------------|--------|------|-------------------------------------|
| 1  |    |      | <i>at 4 o'clock</i>  |        |      | <i>Commenced at 10 o'clock</i>      |
| 2  | 1  |      | <i>at 5 o'clock</i>  |        |      | <i>fine weather</i>                 |
| 3  | 1  |      |                      |        |      |                                     |
| 4  | 1  |      |                      |        |      | <i>Ship's crew &amp; passengers</i> |
| 5  | 2  |      | <i>at 6 o'clock</i>  |        |      | <i>at 10 o'clock</i>                |
| 6  | 2  |      | <i>at 7 o'clock</i>  |        |      |                                     |
| 7  | 2  |      | <i>at 8 o'clock</i>  |        |      | <i>at 11 o'clock</i>                |
| 8  | 2  |      | <i>at 9 o'clock</i>  |        |      | <i>at 12 o'clock</i>                |
| 9  | 2  |      | <i>at 10 o'clock</i> |        |      | <i>at 1 o'clock</i>                 |
| 10 | 2  |      | <i>at 11 o'clock</i> |        |      | <i>at 2 o'clock</i>                 |
| 11 | 2  |      | <i>at 12 o'clock</i> |        |      | <i>at 3 o'clock</i>                 |
| 12 | 2  |      | <i>at 1 o'clock</i>  |        |      | <i>at 4 o'clock</i>                 |
| 1  | 2  | 1    | <i>at 2 o'clock</i>  |        |      | <i>at 5 o'clock</i>                 |
| 2  | 2  | 1    | <i>at 3 o'clock</i>  |        |      | <i>at 6 o'clock</i>                 |
| 3  | 2  | 1    | <i>at 4 o'clock</i>  |        |      | <i>at 7 o'clock</i>                 |
| 4  | 2  | 1    | <i>at 5 o'clock</i>  |        |      | <i>at 8 o'clock</i>                 |
| 5  | 2  | 1    | <i>at 6 o'clock</i>  |        |      | <i>at 9 o'clock</i>                 |
| 6  | 2  | 1    | <i>at 7 o'clock</i>  |        |      | <i>at 10 o'clock</i>                |
| 7  | 2  | 1    | <i>at 8 o'clock</i>  |        |      | <i>at 11 o'clock</i>                |
| 8  | 2  | 1    | <i>at 9 o'clock</i>  |        |      | <i>at 12 o'clock</i>                |
| 9  | 2  | 1    | <i>at 10 o'clock</i> |        |      | <i>at 1 o'clock</i>                 |
| 10 | 2  | 1    | <i>at 11 o'clock</i> |        |      | <i>at 2 o'clock</i>                 |
| 11 | 2  | 1    | <i>at 12 o'clock</i> |        |      | <i>at 3 o'clock</i>                 |
| 12 | 2  | 1    | <i>at 1 o'clock</i>  |        |      | <i>at 4 o'clock</i>                 |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|------------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | <i>10° 30' N</i> |        |             |           |              |



Left N. York from *Hamble* towards *New York*

| H.  | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks.  |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
|---|-------|------------|----------|---------------|-------------|---|-------------|-----------|--------------|------|---------------|-------------|--------|-------------|-----------|--------------|--|--|--|--|--|-----------|--|--|--|-----------|
| 1   | 3     |            | East     |               |             | Commenced with fresh breeze to heavy head<br>at sea morning -                 |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 2   | 3     |            |          |               |             | 3.30 P.M. I sighted the Main & Spindle<br>under the Phoenix, the Intelligence |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 3   | 3     |            |          |               |             | Pointed out in the Main & Spindle   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 4   | 3     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 5   | 1     | 1          | Star     |               |             | On the night of the 20th I went to the<br>the Phoenix and the Intelligence    |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 6   | 1     | 1          |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 7   | 1     | 1          |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 8   | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 9   | 2     |            | West     |               |             | the Phoenix and the Intelligence  |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 10  | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 11  | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 12  | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 1   | 2     |            | Star     |               |             | On the night of the 20th I went to the<br>the Phoenix and the Intelligence    |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 2   | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 3   | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 4   | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 5   | 1     | 1          | Star     |               |             | On the night of the 20th I went to the<br>the Phoenix and the Intelligence    |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 6   | 1     | 1          |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 7   | 1     | 1          |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 8   | 2     | 1          |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 9   | 2     |            | West     |               |             | the Phoenix and the Intelligence  |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 10  | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 11  | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 12  | 2     |            |          |               |             |   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| <table><tr><th>Course.</th><th>Dist.</th><th>Diff. lat.</th><th>Dep.</th><th>Lat. by D. R.</th><th>Lat. by Ob.</th><th>Varia.</th><th>Diff. Long.</th><th>Long. in.</th><th>Long. by Ob.</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td>24° 46' N</td><td></td><td></td><td></td><td>25° 10' E</td></tr></table> |       |            |          |               |             |   | Course.     | Dist.     | Diff. lat.   | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |  |  |  |  |  | 24° 46' N |  |  |  | 25° 10' E |
| Course.   | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
|   |       |            |          |               | 24° 46' N   |   |             |           | 25° 10' E    |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |

| H.  | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks.                                  |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
|---|-------|------------|----------|---------------|-------------|---|-------------|-----------|--------------|------|---------------|-------------|--------|-------------|-----------|--------------|--|--|--|--|--|-----------|--|--|--|-----------|
| 1   | 1     |            | Star     | S. E.         |             | Commenced with fresh breeze to heavy head |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 2   | 1     |            |          |               |             | at sea morning -                          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 3   | 1     |            |          |               |             | 3.30 P.M. I sighted the Main & Spindle    |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 4   | 1     |            |          |               |             | and under the Phoenix, the Intelligence   |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 5   | 1     |            |          |               |             | Pointed out in the Main & Spindle         |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 6   | 1     |            |          |               |             | On the night of the 20th I went to the    |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 7   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 8   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 9   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 10  | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 11  | 1     |            | West     |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 12  | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 1   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 2   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 3   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 4   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 5   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 6   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 7   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 8   | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 9   | 1     |            | Star     |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 10  | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 11  | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| 12  | 1     |            |          |               |             | the Phoenix and the Intelligence          |             |           |              |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
| <table><tr><th>Course.</th><th>Dist.</th><th>Diff. lat.</th><th>Dep.</th><th>Lat. by D. R.</th><th>Lat. by Ob.</th><th>Varia.</th><th>Diff. Long.</th><th>Long. in.</th><th>Long. by Ob.</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td>25° 10' N</td><td></td><td></td><td></td><td>25° 10' E</td></tr></table> |       |            |          |               |             |   | Course.     | Dist.     | Diff. lat.   | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |  |  |  |  |  | 25° 10' N |  |  |  | 25° 10' E |
| Course.   | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.                                    | Diff. Long. | Long. in. | Long. by Ob. |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |
|   |       |            |          |               | 25° 10' N   |   |             |           | 25° 10' E    |      |               |             |        |             |           |              |  |  |  |  |  |           |  |  |  |           |



from *Hamlet* towards *New York*

| H. | K. | H.K. | Courses.    | Winds.      | Lee. | Remarks.                                |
|----|----|------|-------------|-------------|------|---|
| 1  | 4  |      | <i>Wing</i> | <i>Wing</i> |      | <i>commenced with light breeze from</i> |
| 2  | 4  |      |             |             |      | <i>the north</i>                        |
| 3  | 4  |      |             |             |      | <i>the north</i>                        |
| 4  | 4  |      |             |             |      | <i>the north</i>                        |
| 5  | 3  |      |             |             |      | <i>the north</i>                        |
| 6  | 3  |      |             |             |      | <i>the north</i>                        |
| 7  | 3  |      |             |             |      | <i>the north</i>                        |
| 8  | 2  | 1    | <i>Wing</i> |             |      | <i>the north</i>                        |
| 9  | 2  |      |             |             |      | <i>the north</i>                        |
| 10 | 2  |      |             |             |      | <i>the north</i>                        |
| 11 | 3  |      |             |             |      | <i>the north</i>                        |
| 12 | 3  |      |             |             |      | <i>the north</i>                        |
| 1  | 3  |      |             |             |      | <i>the north</i>                        |
| 2  | 3  |      |             |             |      | <i>the north</i>                        |
| 3  | 3  |      |             |             |      | <i>the north</i>                        |
| 4  | 3  |      |             |             |      | <i>the north</i>                        |
| 5  | 3  |      |             |             |      | <i>the north</i>                        |
| 6  | 3  |      |             |             |      | <i>the north</i>                        |
| 7  | 3  |      |             |             |      | <i>the north</i>                        |
| 8  | 2  |      |             |             |      | <i>the north</i>                        |
| 9  | 2  | 1    |             |             |      | <i>the north</i>                        |
| 10 | 2  | 1    |             |             |      | <i>the north</i>                        |
| 11 | 2  |      |             |             |      | <i>the north</i>                        |
| 12 | 2  |      |             |             |      | <i>the north</i>                        |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long. by Ob.     |
|---------|-------|------------|------|---------------|------------------|--------|-------------|-----------|------------------|
|         |       |            |      |               | <i>34° 42' N</i> |        |             |           | <i>21° 53' E</i> |

| H. | K. | H.K. | Courses.    | Winds.      | Lee. | Remarks.                                |
|----|----|------|-------------|-------------|------|---|
| 1  | 4  | 1    | <i>Wing</i> | <i>Wing</i> |      | <i>commenced with light breeze from</i> |
| 2  | 4  | 1    |             |             |      | <i>the north</i>                        |
| 3  | 4  |      |             |             |      | <i>the north</i>                        |
| 4  | 4  |      |             |             |      | <i>the north</i>                        |
| 5  | 4  |      |             |             |      | <i>the north</i>                        |
| 6  | 2  | 1    |             |             |      | <i>the north</i>                        |
| 7  | 1  |      |             |             |      | <i>the north</i>                        |
| 8  | 1  |      |             |             |      | <i>the north</i>                        |
| 9  |    |      |             |             |      | <i>the north</i>                        |
| 10 |    |      |             |             |      | <i>the north</i>                        |
| 11 |    |      |             |             |      | <i>the north</i>                        |
| 12 |    |      |             |             |      | <i>the north</i>                        |
| 1  |    |      |             |             |      | <i>the north</i>                        |
| 2  |    |      |             |             |      | <i>the north</i>                        |
| 3  |    |      |             |             |      | <i>the north</i>                        |
| 4  |    |      |             |             |      | <i>the north</i>                        |
| 5  |    |      |             |             |      | <i>the north</i>                        |
| 6  |    |      |             |             |      | <i>the north</i>                        |
| 7  |    |      |             |             |      | <i>the north</i>                        |
| 8  |    |      |             |             |      | <i>the north</i>                        |
| 9  | 2  |      |             |             |      | <i>the north</i>                        |
| 10 | 2  | 1    |             |             |      | <i>the north</i>                        |
| 11 | 2  | 1    |             |             |      | <i>the north</i>                        |
| 12 | 2  |      |             |             |      | <i>the north</i>                        |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long. by Ob.     |
|---------|-------|------------|------|---------------|------------------|--------|-------------|-----------|------------------|
|         |       |            |      |               | <i>34° 42' N</i> |        |             |           | <i>21° 53' E</i> |



My the sailing from *San Francisco* towards *San Pedro*

| 11.           | K.    | A. K. | Courses. | Winds. | Lee.        | Remarks.                         |              |        |
|---------------|-------|-------|----------|--------|-------------|----------------------------------|--------------|--------|
| 1             | 3     |       | North    | SE     |             | ... with a light breeze from the |              |        |
| 2             | 3     |       |          |        | ... and the |                                  |              |        |
| 3             | 3     |       |          |        | ... of ...  |                                  |              |        |
| 4             | 3     | 1     |          |        | ... of ...  |                                  |              |        |
| 5             | 3     | 1     |          |        | ...         |                                  |              |        |
| 6             | 3     | 1     |          |        | ...         |                                  |              |        |
| 7             | 3     |       |          |        | ...         |                                  |              |        |
| 8             | 3     | 1     |          |        | ...         |                                  |              |        |
| 9             | 4     |       | North    | SE     |             | ... at ...                       |              |        |
| 10            | 3     |       | North    | SE     |             | ...                              |              |        |
| 11            | 4     |       |          |        | ...         |                                  |              |        |
| 12            | 3     | 1     |          |        | ...         |                                  |              |        |
| 1             | 3     |       |          |        | ...         |                                  |              |        |
| 2             | 3     |       |          |        | ...         |                                  |              |        |
| 3             | 3     | 1     |          |        | ...         |                                  |              |        |
| 4             | 3     | 1     |          |        | ...         |                                  |              |        |
| 5             | 3     |       |          |        | ...         |                                  |              |        |
| 6             | 3     |       | ...      | SE     |             | ...                              |              |        |
| 7             | 3     | 1     | North    | SE     |             | ...                              |              |        |
| 8             | 3     | 1     |          |        | ...         |                                  |              |        |
| 9             | 3     |       |          |        | ...         |                                  |              |        |
| 10            | 3     |       |          |        | ...         |                                  |              |        |
| 11            | 3     |       |          |        | ...         |                                  |              |        |
| 12            | 4     |       |          |        | ...         |                                  |              |        |
| ... 19° 10' E |       |       |          |        |             |                                  |              |        |
| Courses       | Dist. | Winds |          |        | Lee         | Lat. by D. R.                    | Lat. by Obs. | Varia. |
|               |       |       |          |        | 34° 56'     |                                  |              |        |

| 11.  | K.    | A.     | Courses. | Winds.       | Lee.         | Remarks.                         |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
|--|-------|--------|----------|--------------|--------------|----------------------------------|-------------|-----------|---------------|------|--------------|--------------|--------|-------------|-----------|---------------|--|--|--|--|--|---------|--|--|--|--|
| 1  | 2     |        | North    | SE           |              | ... with a light breeze from the |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 2  | 2     |        | North    | SE           |              | ... and the                      |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 3  | 4     |        | North    | SE           |              | ... of ...                       |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 4  | 4     |        |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 5  | 3     |        |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 6  | 3     |        |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 7  | 3     |        | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 8  | 3     |        | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 9  | 2     |        | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 10   | 2     |        |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 11   | 2     |        | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 12   | 2     |        |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 1  | 1     | 1      | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 2  | 1     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 3  | 1     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 4  | 1     | 1      | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 5  | 1     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 6  | 1     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 7  | 1     | 1      | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 8  | 1     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 9  | 1     | 1      | North    | SE           |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 10   | 1     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 11   | 2     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| 12   | 2     | 1      |          |              |              | ...                              |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
| <table><tr><th>Courses.</th><th>Dist.</th><th>Winds.</th><th>Lee.</th><th>Lat. by D.R.</th><th>Lat. by Obs.</th><th>Varia.</th><th>Diff. Long.</th><th>Long. in.</th><th>Long. by Obs.</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td>34° 56'</td><td></td><td></td><td></td><td></td></tr></table> |       |        |          |              |              |                                  | Courses.    | Dist.     | Winds.        | Lee. | Lat. by D.R. | Lat. by Obs. | Varia. | Diff. Long. | Long. in. | Long. by Obs. |  |  |  |  |  | 34° 56' |  |  |  |  |
| Courses.   | Dist. | Winds. | Lee.     | Lat. by D.R. | Lat. by Obs. | Varia.                           | Diff. Long. | Long. in. | Long. by Obs. |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |
|  |       |        |          |              | 34° 56'      |                                  |             |           |               |      |              |              |        |             |           |               |  |  |  |  |  |         |  |  |  |  |



Left ... from ... towards ...

| H. | K. | H.K. | Courses. | Winds. | Lcc. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 2  |      | Nb       | Nb     |      | ...      |
| 2  | 2  |      |          |        |      | ...      |
| 3  | 2  |      |          |        |      | ...      |
| 4  | 2  |      |          |        |      | ...      |
| 5  | 2  |      | Nb       |        |      | ...      |
| 6  | 2  |      |          |        |      | ...      |
| 7  | 3  |      |          |        |      | ...      |
| 8  | 2  |      | Nb       |        |      | ...      |
| 9  | 2  | 1    |          |        |      | ...      |
| 10 | 2  | 1    |          |        |      | ...      |
| 11 | 2  | 1    |          |        |      | ...      |
| 12 | 2  | 1    |          |        |      | ...      |
| 1  | 2  |      |          |        |      | ...      |
| 2  | 2  |      |          |        |      | ...      |
| 3  | 2  |      |          |        |      | ...      |
| 4  | 2  |      |          |        |      | ...      |
| 5  | 2  |      |          |        |      | ...      |
| 6  | 2  |      |          |        |      | ...      |
| 7  | 4  |      |          |        |      | ...      |
| 8  | 4  | 1    | Nb       | Nb     |      | ...      |
| 9  | 2  |      |          |        |      | ...      |
| 10 | 2  |      |          |        |      | ...      |
| 11 | 2  |      |          |        |      | ...      |
| 12 | 2  |      |          |        |      | ...      |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 34°08'N     |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lcc. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 2  |      | Nb       | Nb     |      | ...      |
| 2  | 2  |      |          |        |      | ...      |
| 3  | 2  |      |          |        |      | ...      |
| 4  | 2  |      |          |        |      | ...      |
| 5  | 2  |      |          |        |      | ...      |
| 6  | 2  |      |          |        |      | ...      |
| 7  | 2  | 1    | Nb       | Nb     |      | ...      |
| 8  | 2  | 1    |          |        |      | ...      |
| 9  | 2  | 1    |          |        |      | ...      |
| 10 | 2  | 1    |          |        |      | ...      |
| 11 | 2  | 1    |          |        |      | ...      |
| 12 | 2  | 1    |          |        |      | ...      |
| 1  | 2  |      |          |        |      | ...      |
| 2  | 2  |      |          |        |      | ...      |
| 3  | 2  | 1    |          |        |      | ...      |
| 4  | 2  | 1    |          |        |      | ...      |
| 5  | 2  |      |          |        |      | ...      |
| 6  | 2  |      |          |        |      | ...      |
| 7  | 2  | 1    |          |        |      | ...      |
| 8  | 2  | 1    |          |        |      | ...      |
| 9  | 2  |      |          |        |      | ...      |
| 10 | 2  |      |          |        |      | ...      |
| 11 | 2  |      |          |        |      | ...      |
| 12 | 2  |      |          |        |      | ...      |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 32°30'N     |        |             |           |              |



Ship *Albatross* from *Albion* towards *San Francisco*

| II. | K. | H. K. | Course. | Winds. | Lec. | Remarks. |
|-----|----|-------|---------|--------|------|----------|
| 1   |    |       |         |        |      |          |
| 2   |    |       |         |        |      |          |
| 3   |    |       |         |        |      |          |
| 4   |    |       |         |        |      |          |
| 5   |    |       |         |        |      |          |
| 6   |    |       |         |        |      |          |
| 7   |    |       |         |        |      |          |
| 8   |    |       |         |        |      |          |
| 9   |    |       |         |        |      |          |
| 10  |    |       |         |        |      |          |
| 11  |    |       |         |        |      |          |
| 12  |    |       |         |        |      |          |
| 1   |    |       |         |        |      |          |
| 2   |    |       |         |        |      |          |
| 3   |    |       |         |        |      |          |
| 4   |    |       |         |        |      |          |
| 5   |    |       |         |        |      |          |
| 6   |    |       |         |        |      |          |
| 7   |    |       |         |        |      |          |
| 8   |    |       |         |        |      |          |
| 9   |    |       |         |        |      |          |
| 10  |    |       |         |        |      |          |
| 11  |    |       |         |        |      |          |
| 12  |    |       |         |        |      |          |

| Course | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|--------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|        |       |            |      |               |             |        |             |           |              |

| II. | K. | H. K. | Course. | Winds. | Lec. | Remarks. |
|-----|----|-------|---------|--------|------|----------|
| 1   |    |       |         |        |      |          |
| 2   |    |       |         |        |      |          |
| 3   |    |       |         |        |      |          |
| 4   |    |       |         |        |      |          |
| 5   |    |       |         |        |      |          |
| 6   |    |       |         |        |      |          |
| 7   |    |       |         |        |      |          |
| 8   |    |       |         |        |      |          |
| 9   |    |       |         |        |      |          |
| 10  |    |       |         |        |      |          |
| 11  |    |       |         |        |      |          |
| 12  |    |       |         |        |      |          |
| 1   |    |       |         |        |      |          |
| 2   |    |       |         |        |      |          |
| 3   |    |       |         |        |      |          |
| 4   |    |       |         |        |      |          |
| 5   |    |       |         |        |      |          |
| 6   |    |       |         |        |      |          |
| 7   |    |       |         |        |      |          |
| 8   |    |       |         |        |      |          |
| 9   |    |       |         |        |      |          |
| 10  |    |       |         |        |      |          |
| 11  |    |       |         |        |      |          |
| 12  |    |       |         |        |      |          |

| Course | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|--------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|        |       |            |      |               |             |        |             |           |              |



from *Albany* towards *New York*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                     |
|----|----|------|----------|--------|------|------------------------------|
| 1  |    |      |          |        |      | commenced with strong breeze |
| 2  |    |      |          |        |      | and weather                  |
| 3  |    |      |          |        |      |                              |
| 4  |    |      |          |        |      |                              |
| 5  |    |      |          |        |      |                              |
| 6  |    |      |          |        |      |                              |
| 7  |    |      |          |        |      |                              |
| 8  |    |      |          |        |      |                              |
| 9  |    |      |          |        |      |                              |
| 10 |    |      |          |        |      |                              |
| 11 |    |      |          |        |      |                              |
| 12 |    |      |          |        |      |                              |
| 1  |    |      |          |        |      |                              |
| 2  |    |      |          |        |      |                              |
| 3  |    |      |          |        |      |                              |
| 4  |    |      |          |        |      |                              |
| 5  |    |      |          |        |      |                              |
| 6  |    |      |          |        |      |                              |
| 7  |    |      |          |        |      |                              |
| 8  |    |      |          |        |      |                              |
| 9  |    |      |          |        |      |                              |
| 10 |    |      |          |        |      |                              |
| 11 |    |      |          |        |      |                              |
| 12 |    |      |          |        |      |                              |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



from *the* towards *the*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 2  |       |          |        |      |          |
| 2  | 0  |       |          |        |      |          |
| 3  | 0  |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 1  |       |          |        |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 1  |       |          |        |      |          |
| 4  | 1  |       |          |        |      |          |
| 5  | 1  |       |          |        |      |          |
| 6  | 1  |       |          |        |      |          |
| 7  | 1  |       |          |        |      |          |
| 8  | 1  |       |          |        |      |          |
| 9  | 1  |       |          |        |      |          |
| 10 | 1  |       |          |        |      |          |
| 11 | 1  |       |          |        |      |          |
| 12 | 1  |       |          |        |      |          |
| 1  | 1  |       |          |        |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 1  |       |          |        |      |          |
| 4  | 1  |       |          |        |      |          |
| 5  | 1  |       |          |        |      |          |
| 6  | 1  |       |          |        |      |          |
| 7  | 1  |       |          |        |      |          |
| 8  | 1  |       |          |        |      |          |
| 9  | 1  |       |          |        |      |          |
| 10 | 1  |       |          |        |      |          |
| 11 | 1  |       |          |        |      |          |
| 12 | 1  |       |          |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |



from *Harbor* towards *Sea*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



from *North* towards *South*

| H. | K. | H.K. | Courses.      | Winds. | Lee. | Remarks. |
|----|----|------|---------------|--------|------|----------|
| 1  |    |      | <i>By the</i> |        |      |          |
| 2  |    |      |               |        |      |          |
| 3  |    |      |               |        |      |          |
| 4  |    |      |               |        |      |          |
| 5  |    |      |               |        |      |          |
| 6  |    |      | <i>1.1.4</i>  |        |      |          |
| 7  |    |      |               |        |      |          |
| 8  |    |      |               |        |      |          |
| 9  |    |      |               |        |      |          |
| 10 |    |      |               |        |      |          |
| 11 |    |      |               |        |      |          |
| 12 |    |      |               |        |      |          |
| 1  |    |      |               |        |      |          |
| 2  |    |      |               |        |      |          |
| 3  |    |      |               |        |      |          |
| 4  |    |      |               |        |      |          |
| 5  |    |      |               |        |      |          |
| 6  |    |      |               |        |      |          |
| 7  |    |      |               |        |      |          |
| 8  |    |      |               |        |      |          |
| 9  |    |      |               |        |      |          |
| 10 |    |      |               |        |      |          |
| 11 |    |      |               |        |      |          |
| 12 |    |      |               |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|------------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | <i>17° 14' S</i> |        |             |           |              |

| H. | K. | H.K. | Courses.     | Winds.    | Lee. | Remarks. |
|----|----|------|--------------|-----------|------|----------|
| 1  |    |      | <i>1.1.4</i> | <i>SE</i> |      |          |
| 2  |    |      |              |           |      |          |
| 3  |    |      |              |           |      |          |
| 4  |    |      |              |           |      |          |
| 5  |    |      |              |           |      |          |
| 6  |    |      |              |           |      |          |
| 7  |    |      |              |           |      |          |
| 8  |    |      |              |           |      |          |
| 9  |    |      |              |           |      |          |
| 10 |    |      |              |           |      |          |
| 11 |    |      |              |           |      |          |
| 12 |    |      |              |           |      |          |
| 1  |    |      |              |           |      |          |
| 2  |    |      |              |           |      |          |
| 3  |    |      |              |           |      |          |
| 4  |    |      |              |           |      |          |
| 5  |    |      |              |           |      |          |
| 6  |    |      |              |           |      |          |
| 7  |    |      |              |           |      |          |
| 8  |    |      |              |           |      |          |
| 9  |    |      |              |           |      |          |
| 10 |    |      |              |           |      |          |
| 11 |    |      |              |           |      |          |
| 12 |    |      |              |           |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.      | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|------------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | <i>17° 14' S</i> |        |             |           |              |



from *London* towards *the North*

| H. | K. | H.K. | Courses.     | Winds.    | Lee. | Remarks. |
|----|----|------|--------------|-----------|------|----------|
| 1  | 5  |      | <i>North</i> | <i>SE</i> |      |          |
| 2  | 5  |      |              |           |      |          |
| 3  | 5  |      |              |           |      |          |
| 4  | 5  | 1    |              |           |      |          |
| 5  | 5  |      |              |           |      |          |
| 6  | 5  | 1    |              |           |      |          |
| 7  | 5  |      |              |           |      |          |
| 8  | 5  |      |              |           |      |          |
| 9  | 5  | 1    |              |           |      |          |
| 10 | 5  | 1    |              |           |      |          |
| 11 | 5  | 1    |              |           |      |          |
| 12 | 5  | 1    |              |           |      |          |
| 1  | 5  |      |              |           |      |          |
| 2  | 5  |      |              |           |      |          |
| 3  | 5  | 1    |              |           |      |          |
| 4  | 5  |      |              |           |      |          |
| 5  | 5  |      |              |           |      |          |
| 6  | 5  |      |              |           |      |          |
| 7  | 5  |      |              |           |      |          |
| 8  | 5  |      |              |           |      |          |
| 9  | 5  |      |              |           |      |          |
| 10 | 5  |      |              |           |      |          |
| 11 | 5  |      |              |           |      |          |
| 12 | 5  |      |              |           |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses.     | Winds.    | Lee. | Remarks. |
|----|----|------|--------------|-----------|------|----------|
| 1  | 5  |      | <i>North</i> | <i>SE</i> |      |          |
| 2  | 5  |      |              |           |      |          |
| 3  | 5  | 1    | <i>North</i> |           |      |          |
| 4  | 5  | 1    |              |           |      |          |
| 5  | 5  | 1    |              |           |      |          |
| 6  | 5  | 1    |              |           |      |          |
| 7  | 5  |      | <i>North</i> |           |      |          |
| 8  | 5  | 1    |              |           |      |          |
| 9  | 5  |      |              |           |      |          |
| 10 | 5  |      |              |           |      |          |
| 11 | 5  |      |              |           |      |          |
| 12 | 5  |      |              |           |      |          |
| 1  | 5  |      |              |           |      |          |
| 2  | 5  |      |              |           |      |          |
| 3  | 5  |      |              |           |      |          |
| 4  | 3  |      | <i>North</i> |           |      |          |
| 5  | 3  |      |              |           |      |          |
| 6  | 3  |      |              |           |      |          |
| 7  | 3  |      |              |           |      |          |
| 8  | 3  |      |              |           |      |          |
| 9  | 3  |      |              |           |      |          |
| 10 | 3  |      |              |           |      |          |
| 11 | 3  |      |              |           |      |          |
| 12 | 3  |      |              |           |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



Ship *the Fish Hawk* from *Barbours* towards *New York* -

| H. | K. | H. K. | Courses.    | Winds. | Lee. | Remarks.                              |
|----|----|-------|-------------|--------|------|---------------------------------------|
| 1  |    |       |             |        |      |                                       |
| 2  |    |       |             |        |      |                                       |
| 3  |    |       |             |        |      | Commenced with light breeze           |
| 4  |    |       |             |        |      | pleasant weather                      |
| 5  |    |       |             |        |      |                                       |
| 6  |    |       |             |        |      |                                       |
| 7  | 3  | 1     | 1/2 S 1/2 E | SE     |      | Wind to whiffle on the shore          |
| 8  | 2  | 1     |             |        |      | lost sight of land through the sunset |
| 9  |    |       |             |        |      | still a light breeze on shore         |
| 10 | 3  | 1     |             |        |      | Wind up more gentle breeze            |
| 11 | 3  |       |             |        |      | Wind light moderate, pleasant         |
| 12 |    |       |             |        |      |                                       |
| 1  | 3  |       |             |        |      |                                       |
| 2  | 3  |       |             |        |      |                                       |
| 3  |    | 1     |             |        |      |                                       |
| 4  | 3  |       |             |        |      |                                       |
| 5  | 3  |       |             |        |      | Wind about the same                   |
| 6  | 3  |       |             |        |      | the same as of before                 |
| 7  | 3  |       |             |        |      |                                       |
| 8  | 3  |       |             |        |      |                                       |
| 9  | 3  |       |             |        |      | Wind light breeze, pleasant           |
| 10 | 4  | 1     |             |        |      |                                       |
| 11 | 4  | 1     |             |        |      |                                       |
| 12 | 4  |       |             |        |      | Wind to fresh breeze 1/2 S 1/2 E      |

| Dist.   | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 143 1/2 | 57         | 80   | 14° 21' N     | 14° 25' N   | 2 pt   | 1° 28' W    | 74° 44' W |              |

| H. | K. | H. K. | Courses.    | Winds. | Lee. | Remarks.                       |
|----|----|-------|-------------|--------|------|--------------------------------|
| 1  | 4  | 1     | 1/2 S 1/2 E | SE     |      |                                |
| 2  | 4  | 1     |             |        |      |                                |
| 3  | 4  | 1     |             |        |      | Commenced with fine breeze     |
| 4  | 4  |       |             |        |      | pleasant weather               |
| 5  | 4  |       |             |        |      |                                |
| 6  | 4  |       |             |        |      |                                |
| 7  | 4  |       |             |        |      | Wind driving rate at night     |
| 8  | 4  |       |             |        |      | the wind                       |
| 9  | 4  |       |             |        |      |                                |
| 10 | 4  |       |             |        |      |                                |
| 11 | 4  |       |             |        |      | Wind at the same rate on shore |
| 12 | 4  | 1     |             |        |      |                                |
| 1  | 4  | 1     |             |        |      | Wind light breeze, pleasant    |
| 2  | 4  | 1     |             |        |      |                                |
| 3  | 4  | 1     |             |        |      |                                |
| 4  | 4  | 1     |             |        |      |                                |
| 5  | 4  |       |             |        |      | Wind light breeze, pleasant    |
| 6  | 4  |       |             |        |      |                                |
| 7  | 4  |       |             |        |      |                                |
| 8  | 4  |       |             |        |      | Wind light breeze, pleasant    |
| 9  | 4  | 1     |             |        |      |                                |
| 10 | 3  |       |             |        |      | weather                        |
| 11 | 3  |       |             |        |      |                                |
| 12 | 3  |       |             |        |      | Wind light breeze 1/2 S 1/2 E  |

| Dist.   | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 143 1/2 | 57         | 80   | 14° 21' N     | 14° 25' N   | 2 pt   | 1° 28' W    | 74° 44' W |              |



from *Canada* towards *New York*

| H. | K. | H.K. | Courses.    | Winds.    | Lec. | Remarks. <i>Friday March 13<sup>th</sup> 1846</i> |
|----|----|------|-------------|-----------|------|---|
| 1  | 3  | 1    | <i>West</i> | <i>SE</i> |      |   |
| 2  | 3  | 1    |             |           |      |   |
| 3  | 3  | 1    |             |           |      |   |
| 4  | 3  | 1    |             |           |      |   |
| 5  | 3  | 1    |             |           |      |   |
| 6  | 3  | 1    |             |           |      |   |
| 7  | 3  | 1    |             |           |      |   |
| 8  | 3  | 1    |             |           |      |   |
| 9  | 3  | 1    |             |           |      |   |
| 10 | 3  | 1    |             |           |      |   |
| 11 | 3  | 1    |             |           |      |   |
| 12 | 3  | 1    |             |           |      |   |
| 1  | 3  | 1    |             |           |      |   |
| 2  | 3  | 1    |             |           |      |   |
| 3  | 3  | 1    |             |           |      |   |
| 4  | 3  | 1    |             |           |      |   |
| 5  | 3  | 1    |             |           |      |   |
| 6  | 3  | 1    |             |           |      |   |
| 7  | 3  | 1    |             |           |      |   |
| 8  | 3  | 1    |             |           |      |   |
| 9  | 3  | 1    |             |           |      |   |
| 10 | 3  | 1    |             |           |      |   |
| 11 | 3  | 1    |             |           |      |   |
| 12 | 3  | 1    |             |           |      |   |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.   | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|---------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | <i>32 1/2</i> |        |             |           |              |

| H. | K. | H.K. | Courses.    | Winds.    | Lec. | Remarks. <i>Saturday March 14<sup>th</sup> 1846</i> |
|----|----|------|-------------|-----------|------|---|
| 1  | 3  | 1    | <i>West</i> | <i>SE</i> |      |   |
| 2  | 3  | 1    |             |           |      |   |
| 3  | 3  | 1    |             |           |      |   |
| 4  | 3  | 1    |             |           |      |   |
| 5  | 3  | 1    |             |           |      |   |
| 6  | 3  | 1    |             |           |      |   |
| 7  | 3  | 1    |             |           |      |   |
| 8  | 3  | 1    |             |           |      |   |
| 9  | 3  | 1    |             |           |      |   |
| 10 | 3  | 1    |             |           |      |   |
| 11 | 3  | 1    |             |           |      |   |
| 12 | 3  | 1    |             |           |      |   |
| 1  | 3  | 1    |             |           |      |   |
| 2  | 3  | 1    |             |           |      |   |
| 3  | 3  | 1    |             |           |      |   |
| 4  | 3  | 1    |             |           |      |   |
| 5  | 3  | 1    |             |           |      |   |
| 6  | 3  | 1    |             |           |      |   |
| 7  | 3  | 1    |             |           |      |   |
| 8  | 3  | 1    |             |           |      |   |
| 9  | 3  | 1    |             |           |      |   |
| 10 | 3  | 1    |             |           |      |   |
| 11 | 3  | 1    |             |           |      |   |
| 12 | 3  | 1    |             |           |      |   |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.   | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|---------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | <i>32 1/2</i> |        |             |           |              |



Ship the bark from *Massachusetts* towards *San Diego*

| H. | K. | H. K. | Courses.            | Winds. | Lee. | Remarks. |
|----|----|-------|---------------------|--------|------|----------|
| 1  |    |       | <i>Port to Port</i> |        |      |          |
| 2  |    |       |                     |        |      |          |
| 3  |    |       |                     |        |      |          |
| 4  |    |       |                     |        |      |          |
| 5  |    |       |                     |        |      |          |
| 6  |    |       |                     |        |      |          |
| 7  |    |       |                     |        |      |          |
| 8  |    |       |                     |        |      |          |
| 9  |    |       |                     |        |      |          |
| 10 |    |       |                     |        |      |          |
| 11 |    |       |                     |        |      |          |
| 12 |    |       |                     |        |      |          |
| 1  |    |       |                     |        |      |          |
| 2  |    |       |                     |        |      |          |
| 3  |    |       |                     |        |      |          |
| 4  |    |       |                     |        |      |          |
| 5  |    |       |                     |        |      |          |
| 6  |    |       |                     |        |      |          |
| 7  |    |       |                     |        |      |          |
| 8  |    |       |                     |        |      |          |
| 9  |    |       |                     |        |      |          |
| 10 |    |       |                     |        |      |          |
| 11 |    |       |                     |        |      |          |
| 12 |    |       |                     |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |

| H. | K. | H. K. | Courses.            | Winds. | Lee. | Remarks. |
|----|----|-------|---------------------|--------|------|----------|
| 1  |    |       | <i>Port to Port</i> |        |      |          |
| 2  |    |       |                     |        |      |          |
| 3  |    |       |                     |        |      |          |
| 4  | 3  |       |                     |        |      |          |
| 5  | 3  |       |                     |        |      |          |
| 6  | 4  |       |                     |        |      |          |
| 7  | 4  |       |                     |        |      |          |
| 8  | 4  |       |                     |        |      |          |
| 9  | 3  |       |                     |        |      |          |
| 10 | 3  |       |                     |        |      |          |
| 11 | 4  |       |                     |        |      |          |
| 12 | 4  |       |                     |        |      |          |
| 1  | 3  |       |                     |        |      |          |
| 2  | 3  |       |                     |        |      |          |
| 3  | 4  |       |                     |        |      |          |
| 4  | 4  |       |                     |        |      |          |
| 5  | 4  |       |                     |        |      |          |
| 6  | 4  |       |                     |        |      |          |
| 7  | 4  |       |                     |        |      |          |
| 8  | 4  |       |                     |        |      |          |
| 9  | 4  |       |                     |        |      |          |
| 10 | 4  |       |                     |        |      |          |
| 11 | 4  |       |                     |        |      |          |
| 12 | 4  |       |                     |        |      |          |

| Courses. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |



*August 18<sup>th</sup> from ... towards ...*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  |      | 1/2      | SE     |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 4  |      |          |        |      |          |
| 4  | 4  |      |          |        |      |          |
| 5  | 3  |      |          |        |      |          |
| 6  | 3  |      |          | SE     |      |          |
| 7  | 2  |      |          |        |      |          |
| 8  | 2  |      |          | SE     |      |          |
| 9  | 2  |      |          |        |      |          |
| 10 | 2  |      |          |        |      |          |
| 11 | 2  |      |          |        |      |          |
| 12 | 1  | 1    |          | SE     |      |          |
| 1  | 1  |      |          |        |      |          |
| 2  | 1  |      |          |        |      |          |
| 3  | 1  |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      | 1/2      |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  | 1  |      |          | SE     |      |          |
| 8  | 2  |      | 1/2      |        |      |          |
| 9  | 2  |      |          |        |      |          |
| 10 | 3  |      |          |        |      |          |
| 11 | 3  |      |          |        |      |          |
| 12 | 3  |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 11° 06' E   |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 4  |      | 1/2      | SE     |      |          |
| 2  | 4  |      | 1/2      |        |      |          |
| 3  | 4  | 1    |          |        |      |          |
| 4  | 4  | 1    |          |        |      |          |
| 5  | 4  | 1    |          |        |      |          |
| 6  | 4  | 1    |          |        |      |          |
| 7  | 4  | 1    |          |        |      |          |
| 8  | 4  | 1    |          |        |      |          |
| 9  | 4  |      |          |        |      |          |
| 10 | 8  |      |          | SE     |      |          |
| 11 | 3  |      |          |        |      |          |
| 12 | 3  |      |          |        |      |          |
| 1  | 3  | 1    |          |        |      |          |
| 2  | 3  | 1    |          |        |      |          |
| 3  | 3  | 1    |          |        |      |          |
| 4  | 3  | 1    |          |        |      |          |
| 5  | 4  |      |          |        |      |          |
| 6  | 4  |      |          |        |      |          |
| 7  | 4  |      |          |        |      |          |
| 8  | 4  | 1    |          |        |      |          |
| 9  | 4  | 1    |          |        |      |          |
| 10 | 4  | 1    |          | SE     |      |          |
| 11 | 4  | 1    |          |        |      |          |
| 12 | 4  | 1    |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               | 18° 26' S   |        |             |           |              |



Ship The Fish Hawk from Manila towards San Francisco

| H. | K. | H. R. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 1  |       | 1/2 N    | SE     |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 1  |       |          |        |      |          |
| 4  | 1  |       |          |        |      |          |
| 5  | 1  |       |          |        |      |          |
| 6  | 1  |       |          |        |      |          |
| 7  | 1  |       |          |        |      |          |
| 8  | 1  |       |          |        |      |          |
| 9  | 1  |       |          |        |      |          |
| 10 | 1  |       |          |        |      |          |
| 11 | 1  |       |          |        |      |          |
| 12 | 1  |       |          |        |      |          |
| 1  | 1  |       |          |        |      |          |
| 2  | 1  |       |          |        |      |          |
| 3  | 1  |       |          |        |      |          |
| 4  | 1  |       |          |        |      |          |
| 5  | 1  |       |          |        |      |          |
| 6  | 1  |       |          |        |      |          |
| 7  | 1  |       |          |        |      |          |
| 8  | 1  |       |          |        |      |          |
| 9  | 1  |       |          |        |      |          |
| 10 | 1  |       |          |        |      |          |
| 11 | 1  |       |          |        |      |          |
| 12 | 1  |       |          |        |      |          |

| Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|       |            |      |               |             | 141°   |             |           |              |

| H. | K. | H. R. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  | 4  |       | 1/2 N    | SE     |      |          |
| 2  | 4  |       |          |        |      |          |
| 3  | 4  |       |          |        |      |          |
| 4  | 4  |       |          |        |      |          |
| 5  | 4  |       | 1/2 N    |        |      |          |
| 6  | 4  |       |          |        |      |          |
| 7  | 4  |       |          |        |      |          |
| 8  | 4  |       |          |        |      |          |
| 9  | 4  |       |          |        |      |          |
| 10 | 4  |       |          |        |      |          |
| 11 | 4  |       |          |        |      |          |
| 12 | 3  |       |          |        |      |          |
| 1  | 3  |       |          |        |      |          |
| 2  | 3  |       |          |        |      |          |
| 3  | 3  |       |          |        |      |          |
| 4  | 3  |       |          |        |      |          |
| 5  | 3  |       |          |        |      |          |
| 6  | 3  |       |          |        |      |          |
| 7  | 3  |       |          |        |      |          |
| 8  | 3  |       |          |        |      |          |
| 9  | 3  |       |          |        |      |          |
| 10 | 3  |       |          |        |      |          |
| 11 | 3  |       |          |        |      |          |
| 12 | 2  |       |          |        |      |          |

| Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|       |            |      |               |             | 147°   |             |           |              |



From *Albino* towards *San Francisco*

| H. | K. | H.K. | Courses.   | Winds.     | Lec. | Remarks. |
|----|----|------|------------|------------|------|----------|
| 1  | 4  |      | <i>1st</i> | <i>1st</i> |      |          |
| 2  | 4  |      |            |            |      |          |
| 3  | 4  |      |            |            |      |          |
| 4  | 4  |      |            |            |      |          |
| 5  | 4  |      |            |            |      |          |
| 6  | 3  |      |            |            |      |          |
| 7  | 3  |      |            |            |      |          |
| 8  | 3  |      |            |            |      |          |
| 9  | 3  |      |            |            |      |          |
| 10 | 3  |      |            |            |      |          |
| 11 | 5  |      |            |            |      |          |
| 12 | 5  |      |            |            |      |          |
| 1  | 3  |      |            |            |      |          |
| 2  | 3  |      |            |            |      |          |
| 3  | 3  |      |            |            |      |          |
| 4  | 3  |      |            |            |      |          |
| 5  | 3  |      |            |            |      |          |
| 6  | 3  |      |            |            |      |          |
| 7  | 3  |      |            |            |      |          |
| 8  | 3  |      |            |            |      |          |
| 9  | 3  |      |            |            |      |          |
| 10 | 3  |      |            |            |      |          |
| 11 | 3  |      |            |            |      |          |
| 12 | 3  |      |            |            |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.   | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|---------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | <i>134°3'</i> |        |             |           |              |

| H. | K. | H.K. | Courses.   | Winds.     | Lec. | Remarks. |
|----|----|------|------------|------------|------|----------|
| 1  | 1  |      | <i>1st</i> | <i>1st</i> |      |          |
| 2  | 1  |      |            |            |      |          |
| 3  | 1  |      |            |            |      |          |
| 4  | 1  |      |            |            |      |          |
| 5  | 1  |      |            |            |      |          |
| 6  | 1  |      |            |            |      |          |
| 7  | 1  |      |            |            |      |          |
| 8  | 1  |      |            |            |      |          |
| 9  | 1  |      |            |            |      |          |
| 10 | 1  |      |            |            |      |          |
| 11 | 1  |      |            |            |      |          |
| 12 | 1  |      |            |            |      |          |
| 1  | 1  |      |            |            |      |          |
| 2  | 1  |      |            |            |      |          |
| 3  | 1  |      |            |            |      |          |
| 4  | 1  |      |            |            |      |          |
| 5  | 1  |      |            |            |      |          |
| 6  | 1  |      |            |            |      |          |
| 7  | 1  |      |            |            |      |          |
| 8  | 1  |      |            |            |      |          |
| 9  | 1  |      |            |            |      |          |
| 10 | 1  |      |            |            |      |          |
| 11 | 1  |      |            |            |      |          |
| 12 | 1  |      |            |            |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob.  | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|--------------|--------|-------------|-----------|--------------|
|          |       |            |      |               | <i>6°14'</i> |        |             |           |              |



| Up the River from Florida towards New York |    |       |          |            |      |               |                                    |        |             |           |              |
|--|----|-------|----------|------------|------|---------------|------------------------------------|--------|-------------|-----------|--------------|
| H.   | K. | H. K. | Courses. | Winds.     | Lce. | Remarks.      | Monday March 28 <sup>th</sup> 1846 |        |             |           |              |
| 1  |    |       |          |            |      |               |                                    |        |             |           |              |
| 2  |    |       |          |            |      |               |                                    |        |             |           |              |
| 3  |    |       |          |            |      |               |                                    |        |             |           |              |
| 4  |    |       |          |            |      |               |                                    |        |             |           |              |
| 5  |    |       |          |            |      |               |                                    |        |             |           |              |
| 6  |    |       |          |            |      |               |                                    |        |             |           |              |
| 7  |    |       |          |            |      |               |                                    |        |             |           |              |
| 8  |    |       |          |            |      |               |                                    |        |             |           |              |
| 9  |    |       |          |            |      |               |                                    |        |             |           |              |
| 10   |    |       |          |            |      |               |                                    |        |             |           |              |
| 11   |    |       |          |            |      |               |                                    |        |             |           |              |
| 12   |    |       |          |            |      |               |                                    |        |             |           |              |
| 1  |    |       |          |            |      |               |                                    |        |             |           |              |
| 2  |    |       |          |            |      |               |                                    |        |             |           |              |
| 3  |    |       |          |            |      |               |                                    |        |             |           |              |
| 4  |    |       |          |            |      |               |                                    |        |             |           |              |
| 5  |    |       |          |            |      |               |                                    |        |             |           |              |
| 6  |    |       |          |            |      |               |                                    |        |             |           |              |
| 7  |    |       |          |            |      |               |                                    |        |             |           |              |
| 8  |    |       |          |            |      |               |                                    |        |             |           |              |
| 9  |    |       |          |            |      |               |                                    |        |             |           |              |
| 10   |    |       |          |            |      |               |                                    |        |             |           |              |
| 11   |    |       |          |            |      |               |                                    |        |             |           |              |
| 12   |    |       |          |            |      |               |                                    |        |             |           |              |
| Course                                     |    |       | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob.                        | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|  |    |       |          |            |      |               |                                    |        |             |           |              |

| Tuesday April 1 <sup>st</sup> 1846 |    |       |          |            |      |               |             |        |             |           |              |
|------------------------------------|----|-------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| H.                                 | K. | H. K. | Courses. | Winds.     | Lce. | Remarks.      |             |        |             |           |              |
| 1                                  |    |       |          |            |      |               |             |        |             |           |              |
| 2                                  |    |       |          |            |      |               |             |        |             |           |              |
| 3                                  |    |       |          |            |      |               |             |        |             |           |              |
| 4                                  |    |       |          |            |      |               |             |        |             |           |              |
| 5                                  |    |       |          |            |      |               |             |        |             |           |              |
| 6                                  |    |       |          |            |      |               |             |        |             |           |              |
| 7                                  |    |       |          |            |      |               |             |        |             |           |              |
| 8                                  |    |       |          |            |      |               |             |        |             |           |              |
| 9                                  |    |       |          |            |      |               |             |        |             |           |              |
| 10                                 |    |       |          |            |      |               |             |        |             |           |              |
| 11                                 |    |       |          |            |      |               |             |        |             |           |              |
| 12                                 |    |       |          |            |      |               |             |        |             |           |              |
| 1                                  |    |       |          |            |      |               |             |        |             |           |              |
| 2                                  |    |       |          |            |      |               |             |        |             |           |              |
| 3                                  |    |       |          |            |      |               |             |        |             |           |              |
| 4                                  |    |       |          |            |      |               |             |        |             |           |              |
| 5                                  |    |       |          |            |      |               |             |        |             |           |              |
| 6                                  |    |       |          |            |      |               |             |        |             |           |              |
| 7                                  |    |       |          |            |      |               |             |        |             |           |              |
| 8                                  |    |       |          |            |      |               |             |        |             |           |              |
| 9                                  |    |       |          |            |      |               |             |        |             |           |              |
| 10                                 |    |       |          |            |      |               |             |        |             |           |              |
| 11                                 |    |       |          |            |      |               |             |        |             |           |              |
| 12                                 |    |       |          |            |      |               |             |        |             |           |              |
| Course                             |    |       | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|                                    |    |       |          |            |      |               |             |        |             |           |              |



Ship *the Union* from *Havila* towards *San Mateo*

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |







|    |    | from |          | towards |      |          |
|----|----|------|----------|---------|------|----------|
| H. | K. | H.K. | Courses. | Winds.  | Lee. | Remarks. |
| 1  | 8  |      |          |         |      |          |
| 2  | 8  |      |          |         |      |          |
| 3  | 8  |      |          |         |      |          |
| 4  | 8  |      |          |         |      |          |
| 5  | 8  |      |          |         |      |          |
| 6  | 8  |      |          |         |      |          |
| 7  | 8  |      |          |         |      |          |
| 8  | 8  |      |          |         |      |          |
| 9  | 8  |      |          |         |      |          |
| 10 | 8  |      |          |         |      |          |
| 11 | 8  |      |          |         |      |          |
| 12 | 8  |      |          |         |      |          |
| 1  | 8  |      |          |         |      |          |
| 2  | 8  |      |          |         |      |          |
| 3  | 8  |      |          |         |      |          |
| 4  | 8  |      |          |         |      |          |
| 5  | 8  |      |          |         |      |          |
| 6  | 8  |      |          |         |      |          |
| 7  | 8  |      |          |         |      |          |
| 8  | 8  |      |          |         |      |          |
| 9  | 8  |      |          |         |      |          |
| 10 | 8  |      |          |         |      |          |
| 11 | 8  |      |          |         |      |          |
| 12 | 8  |      |          |         |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1st     | 1     | 10         | 11   | 12            | 13          | 14     | 15          | 16        | 17           |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 8  |      |          |        |      |          |
| 2  | 8  |      |          |        |      |          |
| 3  | 8  |      |          |        |      |          |
| 4  | 8  |      |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 8  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |
| 1  | 8  |      |          |        |      |          |
| 2  | 8  |      |          |        |      |          |
| 3  | 8  |      |          |        |      |          |
| 4  | 8  |      |          |        |      |          |
| 5  | 8  |      |          |        |      |          |
| 6  | 8  |      |          |        |      |          |
| 7  | 8  |      |          |        |      |          |
| 8  | 8  |      |          |        |      |          |
| 9  | 8  |      |          |        |      |          |
| 10 | 8  |      |          |        |      |          |
| 11 | 8  |      |          |        |      |          |
| 12 | 8  |      |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1st     | 1     | 10         | 11   | 12            | 13          | 14     | 15          | 16        | 17           |



| from towards |       |            |          |               |             |          |             |           |              |  |
|--------------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|--|
| H.           | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |  |
| 1            |       |            |          |               |             |          |             |           |              |  |
| 2            |       |            |          |               |             |          |             |           |              |  |
| 3            |       |            |          |               |             |          |             |           |              |  |
| 4            |       |            |          |               |             |          |             |           |              |  |
| 5            |       |            |          |               |             |          |             |           |              |  |
| 6            |       |            |          |               |             |          |             |           |              |  |
| 7            |       |            |          |               |             |          |             |           |              |  |
| 8            |       |            |          |               |             |          |             |           |              |  |
| 9            |       |            |          |               |             |          |             |           |              |  |
| 10           |       |            |          |               |             |          |             |           |              |  |
| 11           |       |            |          |               |             |          |             |           |              |  |
| 12           |       |            |          |               |             |          |             |           |              |  |
| 1            |       |            |          |               |             |          |             |           |              |  |
| 2            |       |            |          |               |             |          |             |           |              |  |
| 3            |       |            |          |               |             |          |             |           |              |  |
| 4            |       |            |          |               |             |          |             |           |              |  |
| 5            |       |            |          |               |             |          |             |           |              |  |
| 6            |       |            |          |               |             |          |             |           |              |  |
| 7            |       |            |          |               |             |          |             |           |              |  |
| 8            |       |            |          |               |             |          |             |           |              |  |
| 9            |       |            |          |               |             |          |             |           |              |  |
| 10           |       |            |          |               |             |          |             |           |              |  |
| 11           |       |            |          |               |             |          |             |           |              |  |
| 12           |       |            |          |               |             |          |             |           |              |  |
| Courses.     | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |
| A 877        | 144   | 11'        | 110'     | 44° 37'       | 40° 51'     | 46'      | 1° 11'      | 51° 37'   |              |  |
| H.           | K.    | H. K.      | Courses. | Winds.        | Lee.        | Remarks. |             |           |              |  |
| 1            |       |            |          |               |             |          |             |           |              |  |
| 2            |       |            |          |               |             |          |             |           |              |  |
| 3            |       |            |          |               |             |          |             |           |              |  |
| 4            |       |            |          |               |             |          |             |           |              |  |
| 5            |       |            |          |               |             |          |             |           |              |  |
| 6            |       |            |          |               |             |          |             |           |              |  |
| 7            |       |            |          |               |             |          |             |           |              |  |
| 8            |       |            |          |               |             |          |             |           |              |  |
| 9            |       |            |          |               |             |          |             |           |              |  |
| 10           |       |            |          |               |             |          |             |           |              |  |
| 11           |       |            |          |               |             |          |             |           |              |  |
| 12           |       |            |          |               |             |          |             |           |              |  |
| 1            |       |            |          |               |             |          |             |           |              |  |
| 2            |       |            |          |               |             |          |             |           |              |  |
| 3            |       |            |          |               |             |          |             |           |              |  |
| 4            |       |            |          |               |             |          |             |           |              |  |
| 5            |       |            |          |               |             |          |             |           |              |  |
| 6            |       |            |          |               |             |          |             |           |              |  |
| 7            |       |            |          |               |             |          |             |           |              |  |
| 8            |       |            |          |               |             |          |             |           |              |  |
| 9            |       |            |          |               |             |          |             |           |              |  |
| 10           |       |            |          |               |             |          |             |           |              |  |
| 11           |       |            |          |               |             |          |             |           |              |  |
| 12           |       |            |          |               |             |          |             |           |              |  |
| Courses.     | Dist. | Diff. Lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |  |
| A 567r       | 161   | 1° 5'      | 103'     | 43° 55'       | 50° 5'      | 67'      | 2° 4'       | 51° 37'   |              |  |



from

towards

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
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| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
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| 12 |    |      |          |        |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
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| 3  |    |      |          |        |      |          |
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| 6  |    |      |          |        |      |          |
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| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |



| H. K.   |       | H. K.      | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
| 100     | 10    | 1          | 1        | 100           | 100         | 100      | 100         | 100       | 100          |

| H. K.   |       | H. K.      | Courses. | Winds.        | Lec.        | Remarks. |             |           |              |
|---------|-------|------------|----------|---------------|-------------|----------|-------------|-----------|--------------|
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| 1       |       |            |          |               |             |          |             |           |              |
| 2       |       |            |          |               |             |          |             |           |              |
| 3       |       |            |          |               |             |          |             |           |              |
| 4       |       |            |          |               |             |          |             |           |              |
| 5       |       |            |          |               |             |          |             |           |              |
| 6       |       |            |          |               |             |          |             |           |              |
| 7       |       |            |          |               |             |          |             |           |              |
| 8       |       |            |          |               |             |          |             |           |              |
| 9       |       |            |          |               |             |          |             |           |              |
| 10      |       |            |          |               |             |          |             |           |              |
| 11      |       |            |          |               |             |          |             |           |              |
| 12      |       |            |          |               |             |          |             |           |              |
| Course. | Dist. | Diff. lat. | Dep.     | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in. | Long. by Ob. |
| 100     | 100   | 10         | 10       | 100           | 100         | 100      | 100         | 100       | 100          |



from

towards

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in.   | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-------------|--------------|
| 1       | 100   | 107        | 1    | 14 44' N      | 14 55' N    | 11' E  | 10 10'      | 10 21' West |              |

| H. | K. | H.K. | Courses. | Winds. | Lec. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in.   | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-------------|--------------|
| 1       | 100   | 107        | 1    | 14 44' N      | 14 55' N    | 11' E  | 10 10'      | 10 21' West |              |



| from towards |    |        |          |        |      |          |         |       |            |      |               |             |        |             |           |              |     |
|--------------|----|--------|----------|--------|------|----------|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|-----|
| II.          | K. | II. K. | Courses. | Winds. | Lec. | Remarks. |         |       |            |      |               |             |        |             |           |              |     |
| 1            | 4  |        | 1/2      | SE     |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 2            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 3            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 4            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 5            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 6            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 7            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 8            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 9            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 10           | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 11           | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 12           | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 1            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 2            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 3            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 4            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 5            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 6            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 7            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 8            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 9            | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 10           | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 11           | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 12           | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
|              |    |        |          |        |      |          | Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |     |
|              |    |        |          |        |      |          | 1/2     | 100   | 100        |      | 100           | 100         | 100    | 100         | 100       | 100          | 100 |

| II. | K. | II. K. | Courses. | Winds. | Lec. | Remarks. |         |       |            |      |               |             |        |             |           |              |     |
|-----|----|--------|----------|--------|------|----------|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|-----|
| 1   | 4  |        | 1/2      | SE     |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 2   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 3   | 4  |        | 1/2      | SE     |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 4   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 5   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 6   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 7   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 8   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 9   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 10  | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 11  | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 12  | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 1   | 4  |        | 1/2      |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 2   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 3   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 4   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 5   | 4  |        | 1/2      |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 6   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 7   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 8   | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 9   | 4  |        | 1/2      |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 10  | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 11  | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
| 12  | 4  |        |          |        |      | ...      |         |       |            |      |               |             |        |             |           |              |     |
|     |    |        |          |        |      |          | Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |     |
|     |    |        |          |        |      |          | 1/2     | 110   | 13.5       | 1    | 100           | 100         | 100    | 100         | 100       | 100          | 100 |



from

towards

| Il. | K. | Il.K. | Courses. | Winds. | Lee. | Remarks. |
|-----|----|-------|----------|--------|------|----------|
| 1   | 1  |       | 178.1    |        |      |          |
| 2   | 1  |       | 178.1    |        |      |          |
| 3   | 1  |       |          |        |      |          |
| 4   | 1  |       |          |        |      |          |
| 5   | 1  |       |          |        |      |          |
| 6   | 1  |       |          |        |      |          |
| 7   | 1  |       |          |        |      |          |
| 8   | 1  |       |          |        |      |          |
| 9   | 1  |       |          |        |      |          |
| 10  | 1  |       |          |        |      |          |
| 11  | 1  |       |          |        |      |          |
| 12  | 1  |       |          |        |      |          |
| 1   | 1  |       |          |        |      |          |
| 2   | 1  |       |          |        |      |          |
| 3   | 1  |       |          |        |      |          |
| 4   | 1  |       |          |        |      |          |
| 5   | 1  |       |          |        |      |          |
| 6   | 1  |       |          |        |      |          |
| 7   | 1  |       |          |        |      |          |
| 8   | 7  |       |          |        |      |          |
| 9   | 7  |       |          |        |      |          |
| 10  | 7  |       |          |        |      |          |
| 11  | 7  |       |          |        |      |          |
| 12  | 7  |       |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep.  | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in.  | Long. by Ob. |
|---------|-------|------------|-------|---------------|-------------|----------|-------------|------------|--------------|
| 178.1   | 15.7  | 19.1       | 1.0.0 | 20° 51' N     | 20° 41' N   | 1° 10' E | 2° 10'      | 104° 45' W |              |

| Il. | K. | Il.K. | Courses. | Winds. | Lee. | Remarks. |
|-----|----|-------|----------|--------|------|----------|
| 1   | 7  | 1     | 178.1    |        |      |          |
| 2   | 7  | 1     |          |        |      |          |
| 3   | 7  | 1     |          |        |      |          |
| 4   | 7  | 1     |          |        |      |          |
| 5   | 7  | 1     |          |        |      |          |
| 6   | 7  | 1     |          |        |      |          |
| 7   | 7  | 1     |          |        |      |          |
| 8   | 7  | 1     |          |        |      |          |
| 9   | 7  | 1     |          |        |      |          |
| 10  | 7  | 1     |          |        |      |          |
| 11  | 7  | 1     |          |        |      |          |
| 12  | 7  | 1     |          |        |      |          |
| 1   | 7  | 1     |          |        |      |          |
| 2   | 7  | 1     |          |        |      |          |
| 3   | 7  | 1     |          |        |      |          |
| 4   | 7  | 1     |          |        |      |          |
| 5   | 7  | 1     |          |        |      |          |
| 6   | 7  | 1     |          |        |      |          |
| 7   | 7  | 1     |          |        |      |          |
| 8   | 7  | 1     |          |        |      |          |
| 9   | 7  | 1     |          |        |      |          |
| 10  | 7  | 1     |          |        |      |          |
| 11  | 7  | 1     |          |        |      |          |
| 12  | 7  | 1     |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep.  | Lat. by D. R. | Lat. by Ob. | Varia.   | Diff. Long. | Long. in.  | Long. by Ob. |
|---------|-------|------------|-------|---------------|-------------|----------|-------------|------------|--------------|
| 178.1   | 15.6  | 140-8      | 1.1.1 | 22° 31' N     | 22° 40' N   | 1° 10' E | 3° 10'      | 104° 45' W |              |



|          |  |       |            |        |               |                                  |         |             |           |              |
|----------|--|-------|------------|--------|---------------|----------------------------------|---------|-------------|-----------|--------------|
| H. K.    |  | H. K. | Courses.   | Winds. | Lee.          | Remarks.                         |         |             |           |              |
| 1        |  |       | 100        | SE     |               | from the S. E. towards the N. E. |         |             |           |              |
| 2        |  |       |            |        |               |                                  |         |             |           |              |
| 3        |  |       |            |        |               |                                  |         |             |           |              |
| 4        |  |       |            |        |               |                                  |         |             |           |              |
| 5        |  |       |            |        |               |                                  |         |             |           |              |
| 6        |  |       |            |        |               |                                  |         |             |           |              |
| 7        |  |       |            |        |               |                                  |         |             |           |              |
| 8        |  |       |            |        |               |                                  |         |             |           |              |
| 9        |  |       |            |        |               |                                  |         |             |           |              |
| 10       |  |       |            |        |               |                                  |         |             |           |              |
| 11       |  |       |            |        |               |                                  |         |             |           |              |
| 12       |  |       |            |        |               |                                  |         |             |           |              |
| 1        |  |       |            |        |               |                                  |         |             |           |              |
| 2        |  |       |            |        |               |                                  |         |             |           |              |
| 3        |  |       |            |        |               |                                  |         |             |           |              |
| 4        |  |       |            |        |               |                                  |         |             |           |              |
| 5        |  |       |            |        |               |                                  |         |             |           |              |
| 6        |  |       |            |        |               |                                  |         |             |           |              |
| 7        |  |       |            |        |               |                                  |         |             |           |              |
| 8        |  |       |            |        |               |                                  |         |             |           |              |
| 9        |  |       |            |        |               |                                  |         |             |           |              |
| 10       |  |       |            |        |               |                                  |         |             |           |              |
| 11       |  |       |            |        |               |                                  |         |             |           |              |
| 12       |  |       |            |        |               |                                  |         |             |           |              |
| Course.  |  | Dist. | Diff. Lat. | Dep.   | Lat. by D. R. | Lat. by Ob.                      | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
| 139° 41' |  | 100   | 100 S      | 40.5   | 24° 25' 1     | 24° 25' 1                        | 24° 45' | 28'         | 1746'     | 1746'        |

|          |  |       |            |        |               |                                  |         |             |           |              |
|----------|--|-------|------------|--------|---------------|----------------------------------|---------|-------------|-----------|--------------|
| H. K.    |  | H. K. | Courses.   | Winds. | Lee.          | Remarks.                         |         |             |           |              |
| 1        |  |       | 100        | SE     |               | from the S. E. towards the N. E. |         |             |           |              |
| 2        |  |       |            |        |               |                                  |         |             |           |              |
| 3        |  |       |            |        |               |                                  |         |             |           |              |
| 4        |  |       |            |        |               |                                  |         |             |           |              |
| 5        |  |       |            |        |               |                                  |         |             |           |              |
| 6        |  |       |            |        |               |                                  |         |             |           |              |
| 7        |  |       |            |        |               |                                  |         |             |           |              |
| 8        |  |       |            |        |               |                                  |         |             |           |              |
| 9        |  |       |            |        |               |                                  |         |             |           |              |
| 10       |  |       |            |        |               |                                  |         |             |           |              |
| 11       |  |       |            |        |               |                                  |         |             |           |              |
| 12       |  |       |            |        |               |                                  |         |             |           |              |
| 1        |  |       |            |        |               |                                  |         |             |           |              |
| 2        |  |       |            |        |               |                                  |         |             |           |              |
| 3        |  |       |            |        |               |                                  |         |             |           |              |
| 4        |  |       |            |        |               |                                  |         |             |           |              |
| 5        |  |       |            |        |               |                                  |         |             |           |              |
| 6        |  |       |            |        |               |                                  |         |             |           |              |
| 7        |  |       |            |        |               |                                  |         |             |           |              |
| 8        |  |       |            |        |               |                                  |         |             |           |              |
| 9        |  |       |            |        |               |                                  |         |             |           |              |
| 10       |  |       |            |        |               |                                  |         |             |           |              |
| 11       |  |       |            |        |               |                                  |         |             |           |              |
| 12       |  |       |            |        |               |                                  |         |             |           |              |
| Course.  |  | Dist. | Diff. Lat. | Dep.   | Lat. by D. R. | Lat. by Ob.                      | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
| 139° 41' |  | 100   | 100 S      | 40.5   | 24° 25' 1     | 24° 25' 1                        | 24° 45' | 28'         | 1746'     | 1746'        |



from *the river* towards *the sea*

| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks.                              |
|----|----|------|----------|--------|------|---------------------------------------|
| 1  | 1  | 1    | W 1/2 S  | SE     |      | Commenced with a fine breeze from the |
| 2  | 1  | 1    |          |        |      | SE & pleasant weather                 |
| 3  | 1  | 1    |          |        |      |                                       |
| 4  | 1  | 1    |          |        |      |                                       |
| 5  | 1  | 1    |          | SE     |      |                                       |
| 6  | 1  | 1    |          |        |      |                                       |
| 7  | 4  | 1    |          |        |      |                                       |
| 8  | 3  | 1    |          |        |      |                                       |
| 9  | 3  | 1    |          |        |      |                                       |
| 10 | 4  | 1    |          |        |      |                                       |
| 11 | 1  | 1    |          |        |      |                                       |
| 12 | 1  | 1    |          | SE     |      | Midnight. Breeze from SE              |
| 1  | 1  | 1    |          |        |      |                                       |
| 2  | 1  | 1    |          |        |      |                                       |
| 3  | 1  | 1    |          |        |      |                                       |
| 4  | 1  | 1    |          |        |      |                                       |
| 5  | 1  | 1    |          |        |      |                                       |
| 6  | 1  | 1    |          |        |      |                                       |
| 7  | 1  | 1    | SE       |        |      | Breeze with light breeze pleasant.    |
| 8  | 1  | 1    |          |        |      |                                       |
| 9  | 1  | 1    |          |        |      |                                       |
| 10 | 1  | 1    |          |        |      |                                       |
| 11 | 1  | 1    |          |        |      |                                       |
| 12 | 1  | 1    |          |        |      |                                       |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. by | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|----------|--------------|
| W 1/2 S | 1     | 1          | 1    | 2° 55' N      | 2° 55' N    | 1/2° E | 1           | 1        | 1            |

| H. | K. | H.K. | Courses. | Winds. | Lce. | Remarks.                              |
|----|----|------|----------|--------|------|---------------------------------------|
| 1  | 1  | 1    | SE       | SE     |      | Commenced with a fine breeze from the |
| 2  | 1  | 1    |          |        |      | SE & pleasant weather                 |
| 3  | 1  | 1    |          |        |      |                                       |
| 4  | 1  | 1    | SE       | SE     |      |                                       |
| 5  | 1  | 1    |          |        |      |                                       |
| 6  | 1  | 1    |          |        |      |                                       |
| 7  | 1  | 1    | SE       | SE     |      |                                       |
| 8  | 0  | 1    |          |        |      |                                       |
| 9  | 1  | 1    |          |        |      |                                       |
| 10 | 1  | 1    |          |        |      |                                       |
| 11 | 1  | 1    |          |        |      |                                       |
| 12 | 1  | 1    |          |        |      |                                       |
| 1  | 1  | 1    |          |        |      | Midnight. Breeze from SE              |
| 2  | 1  | 1    |          |        |      |                                       |
| 3  | 1  | 1    |          |        |      |                                       |
| 4  | 1  | 1    |          |        |      |                                       |
| 5  | 1  | 1    |          |        |      |                                       |
| 6  | 1  | 1    |          |        |      |                                       |
| 7  | 1  | 1    |          |        |      |                                       |
| 8  | 1  | 1    |          |        |      |                                       |
| 9  | 1  | 1    |          |        |      |                                       |
| 10 | 1  | 1    |          |        |      |                                       |
| 11 | 1  | 1    |          |        |      |                                       |
| 12 | 1  | 1    |          |        |      |                                       |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. by | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|----------|--------------|
| SE      | 1     | 1          | 1    | 2° 58' N      | 2° 58' N    | 1/2° E | 1           | 1        | 1            |



Up the River from *Manila* towards *Panama*

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course.         | Dist.     | Diff. lat. | Dep.      | Lat. by D. R.  | Lat. by Ob. | Varia.    | Diff. Long. | Long. in.       | Long. by Ob.    |
|-----------------|-----------|------------|-----------|----------------|-------------|-----------|-------------|-----------------|-----------------|
| <i>121° 11'</i> | <i>12</i> | <i>24</i>  | <i>27</i> | <i>24° 11'</i> | <i>24</i>   | <i>12</i> | <i>24</i>   | <i>121° 11'</i> | <i>121° 11'</i> |

| H. | K. | H. K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|-------|----------|--------|------|----------|
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |
| 1  |    |       |          |        |      |          |
| 2  |    |       |          |        |      |          |
| 3  |    |       |          |        |      |          |
| 4  |    |       |          |        |      |          |
| 5  |    |       |          |        |      |          |
| 6  |    |       |          |        |      |          |
| 7  |    |       |          |        |      |          |
| 8  |    |       |          |        |      |          |
| 9  |    |       |          |        |      |          |
| 10 |    |       |          |        |      |          |
| 11 |    |       |          |        |      |          |
| 12 |    |       |          |        |      |          |

| Course.         | Dist.     | Diff. lat. | Dep.      | Lat. by D. R.  | Lat. by Ob. | Varia.    | Diff. Long. | Long. in.       | Long. by Ob.    |
|-----------------|-----------|------------|-----------|----------------|-------------|-----------|-------------|-----------------|-----------------|
| <i>121° 11'</i> | <i>12</i> | <i>24</i>  | <i>27</i> | <i>24° 11'</i> | <i>24</i>   | <i>12</i> | <i>24</i>   | <i>121° 11'</i> | <i>121° 11'</i> |



from *London* towards *London*

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Courses. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|----------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|          |       |            |      |               |             |        |             |           |              |



| II. | K. | H. K. | Courses. | Winds. | Lee. | Remarks.    |
|-----|----|-------|----------|--------|------|-------------|
|     |    |       |          |        |      | Dec 11 1854 |

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|----|---|------|------|------|
| 1  | 9 | 1891 | 1891 | 1891 |
| 2  | 9 | 1891 | 1891 | 1891 |
| 3  | 9 | 1891 | 1891 | 1891 |
| 4  | 9 | 1891 | 1891 | 1891 |
| 5  | 9 | 1891 | 1891 | 1891 |
| 6  | 9 | 1891 | 1891 | 1891 |
| 7  | 9 | 1891 | 1891 | 1891 |
| 8  | 9 | 1891 | 1891 | 1891 |
| 9  | 9 | 1891 | 1891 | 1891 |
| 10 | 9 | 1891 | 1891 | 1891 |
| 11 | 9 | 1891 | 1891 | 1891 |
| 12 | 9 | 1891 | 1891 | 1891 |
| 1  | 9 | 1891 | 1891 | 1891 |
| 2  | 9 | 1891 | 1891 | 1891 |
| 3  | 9 | 1891 | 1891 | 1891 |
| 4  | 9 | 1891 | 1891 | 1891 |
| 5  | 9 | 1891 | 1891 | 1891 |
| 6  | 9 | 1891 | 1891 | 1891 |
| 7  | 9 | 1891 | 1891 | 1891 |
| 8  | 9 | 1891 | 1891 | 1891 |
| 9  | 9 | 1891 | 1891 | 1891 |
| 10 | 9 | 1891 | 1891 | 1891 |
| 11 | 9 | 1891 | 1891 | 1891 |
| 12 | 9 | 1891 | 1891 | 1891 |

| Cause. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|--------|-------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
|        |       |            |      |               | 26° 41'     | 26° 41' |             |           |              |

| H. | R. | D.R. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  | 1  | 1    | 1        | 1      | 1    | 1        |
| 2  | 2  | 2    | 2        | 2      | 2    | 2        |
| 3  | 3  | 3    | 3        | 3      | 3    | 3        |
| 4  | 4  | 4    | 4        | 4      | 4    | 4        |
| 5  | 5  | 5    | 5        | 5      | 5    | 5        |
| 6  | 6  | 6    | 6        | 6      | 6    | 6        |
| 7  | 7  | 7    | 7        | 7      | 7    | 7        |
| 8  | 8  | 8    | 8        | 8      | 8    | 8        |
| 9  | 9  | 9    | 9        | 9      | 9    | 9        |
| 10 | 10 | 10   | 10       | 10     | 10   | 10       |
| 11 | 11 | 11   | 11       | 11     | 11   | 11       |
| 12 | 12 | 12   | 12       | 12     | 12   | 12       |

| Course. | Dist. | Diff. Lat. | Dep. | Lat. by D.R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long by Ob. |
|---------|-------|------------|------|--------------|-------------|--------|-------------|-----------|-------------|
|         |       |            |      |              | 22 1/2      |        |             |           |             |



from                      towards

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lee. | Remarks.                           |
|----|----|------|----------|--------|------|------------------------------------|
| 1  |    |      |          |        |      | Commenced with fine breeze & fine  |
| 2  | 7  |      |          |        |      | ing winds -                        |
| 3  | 0  |      |          |        |      |                                    |
| 4  | 0  |      |          |        |      |                                    |
| 5  | 4  |      |          |        |      | 2 P.M. Saw the Westward of Heron's |
| 6  | 4  |      |          |        |      | Island about 20 miles distant.     |
| 7  | 3  |      |          |        |      |                                    |
| 8  | 2  |      |          |        |      | 3 P.M. Put on a land - Wind by     |
| 9  | 2  |      |          |        |      | seaward & landward & set 1/2 point |
| 10 | 2  |      |          |        |      | but still landward -               |
| 11 | 2  |      |          |        |      |                                    |
| 12 | 2  |      |          |        |      |                                    |
| 1  | 2  |      |          |        |      | Though the light light breeze      |
| 2  | 2  |      |          |        |      | pressing winds -                   |
| 3  | 2  |      |          |        |      |                                    |
| 4  | 2  |      |          |        |      |                                    |
| 5  | 2  |      |          |        |      |                                    |
| 6  | 2  |      |          |        |      |                                    |
| 7  | 2  |      |          |        |      |                                    |
| 8  |    |      |          |        |      |                                    |
| 9  |    |      |          |        |      |                                    |
| 10 |    |      |          |        |      |                                    |
| 11 |    |      |          |        |      |                                    |
| 12 |    |      |          |        |      |                                    |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



|         |    |      |          | from       |      |               |             | towards |             |           |              |
|---------|----|------|----------|------------|------|---------------|-------------|---------|-------------|-----------|--------------|
| H.      | K. | H.K. | Courses. | Winds.     | Lee. | Remarks.      |             |         |             |           |              |
| 1       |    |      |          |            |      |               |             |         |             |           |              |
| 2       |    |      |          |            |      |               |             |         |             |           |              |
| 3       |    |      |          |            |      |               |             |         |             |           |              |
| 4       |    |      |          |            |      |               |             |         |             |           |              |
| 5       |    |      |          |            |      |               |             |         |             |           |              |
| 6       |    |      |          |            |      |               |             |         |             |           |              |
| 7       |    |      |          |            |      |               |             |         |             |           |              |
| 8       |    |      |          |            |      |               |             |         |             |           |              |
| 9       |    |      |          |            |      |               |             |         |             |           |              |
| 10      |    |      |          |            |      |               |             |         |             |           |              |
| 11      |    |      |          |            |      |               |             |         |             |           |              |
| 12      |    |      |          |            |      |               |             |         |             |           |              |
| 1       |    |      |          |            |      |               |             |         |             |           |              |
| 2       |    |      |          |            |      |               |             |         |             |           |              |
| 3       |    |      |          |            |      |               |             |         |             |           |              |
| 4       |    |      |          |            |      |               |             |         |             |           |              |
| 5       |    |      |          |            |      |               |             |         |             |           |              |
| 6       |    |      |          |            |      |               |             |         |             |           |              |
| 7       |    |      |          |            |      |               |             |         |             |           |              |
| 8       |    |      |          |            |      |               |             |         |             |           |              |
| 9       |    |      |          |            |      |               |             |         |             |           |              |
| 10      |    |      |          |            |      |               |             |         |             |           |              |
| 11      |    |      |          |            |      |               |             |         |             |           |              |
| 12      |    |      |          |            |      |               |             |         |             |           |              |
| Course. |    |      | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia.  | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |      |          |            |      |               |             |         |             |           |              |

| H.      | K. | H.K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
|---------|----|------|----------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
| 1       |    |      |          |            |      |               |             |        |             |           |              |
| 2       |    |      |          |            |      |               |             |        |             |           |              |
| 3       |    |      |          |            |      |               |             |        |             |           |              |
| 4       |    |      |          |            |      |               |             |        |             |           |              |
| 5       |    |      |          |            |      |               |             |        |             |           |              |
| 6       |    |      |          |            |      |               |             |        |             |           |              |
| 7       |    |      |          |            |      |               |             |        |             |           |              |
| 8       |    |      |          |            |      |               |             |        |             |           |              |
| 9       |    |      |          |            |      |               |             |        |             |           |              |
| 10      |    |      |          |            |      |               |             |        |             |           |              |
| 11      |    |      |          |            |      |               |             |        |             |           |              |
| 12      |    |      |          |            |      |               |             |        |             |           |              |
| 1       |    |      |          |            |      |               |             |        |             |           |              |
| 2       |    |      |          |            |      |               |             |        |             |           |              |
| 3       |    |      |          |            |      |               |             |        |             |           |              |
| 4       |    |      |          |            |      |               |             |        |             |           |              |
| 5       |    |      |          |            |      |               |             |        |             |           |              |
| 6       |    |      |          |            |      |               |             |        |             |           |              |
| 7       |    |      |          |            |      |               |             |        |             |           |              |
| 8       |    |      |          |            |      |               |             |        |             |           |              |
| 9       |    |      |          |            |      |               |             |        |             |           |              |
| 10      |    |      |          |            |      |               |             |        |             |           |              |
| 11      |    |      |          |            |      |               |             |        |             |           |              |
| 12      |    |      |          |            |      |               |             |        |             |           |              |
| Course. |    |      | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|         |    |      |          |            |      |               |             |        |             |           |              |



from

towards

| H. | K. | H.K. | Courses. | Winds. | Lcc. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
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| 12 |    |      |          |        |      |          |
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| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
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| 9  |    |      |          |        |      |          |
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| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |

| H. | K. | H.K. | Courses. | Winds. | Lcc. | Remarks. |
|----|----|------|----------|--------|------|----------|
| 1  |    |      |          |        |      |          |
| 2  |    |      |          |        |      |          |
| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
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| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
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| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |
| 1  |    |      |          |        |      |          |
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| 3  |    |      |          |        |      |          |
| 4  |    |      |          |        |      |          |
| 5  |    |      |          |        |      |          |
| 6  |    |      |          |        |      |          |
| 7  |    |      |          |        |      |          |
| 8  |    |      |          |        |      |          |
| 9  |    |      |          |        |      |          |
| 10 |    |      |          |        |      |          |
| 11 |    |      |          |        |      |          |
| 12 |    |      |          |        |      |          |

| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
|---------|-------|------------|------|---------------|-------------|--------|-------------|-----------|--------------|
|         |       |            |      |               |             |        |             |           |              |



| <i>from</i> |    |       |          |            |      | <i>towards</i> |             |        |             |           |              |
|-------------|----|-------|----------|------------|------|----------------|-------------|--------|-------------|-----------|--------------|
| H.          | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.       |             |        |             |           |              |
| 1           |    |       |          |            |      |                |             |        |             |           |              |
| 2           |    |       |          |            |      |                |             |        |             |           |              |
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| 4           |    |       |          |            |      |                |             |        |             |           |              |
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| Course.     |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R.  | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
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| <i>from</i> |    |      |          |        |      | <i>towards</i> |
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| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
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| Course. |    |       | Dist.    | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| <i>from</i> |    |      |          |            |      | <i>towards</i> |             |        |             |           |              |
|-------------|----|------|----------|------------|------|----------------|-------------|--------|-------------|-----------|--------------|
| H.          | K. | H.K. | Courses. | Winds.     | Lee. | Remarks.       |             |        |             |           |              |
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| <i>from</i> |    |       |          |            |      | <i>towards</i> |             |        |             |           |              |
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*from**towards*

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| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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| H. | K. | H.K. | Courses. | Winds. | Lcc. | Remarks. |
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| Course. | Dist. | Diff. lat. | Dep. | Lat. by D. R. | Lat. by Ob. | Varia. | Diff. Long. | Long. in. | Long. by Ob. |
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Manufactured and sold by JOHN P. JEWETT, 193 Essex Street, Salem, Mass.



| <i>from</i> |    |       |          |            |      | <i>towards</i> |             |        |             |           |              |
|-------------|----|-------|----------|------------|------|----------------|-------------|--------|-------------|-----------|--------------|
| H.          | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.       |             |        |             |           |              |
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| H.      | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.      |             |        |             |           |              |
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*from**towards*

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Manufactured and sold by JOHN P. JEWETT, 193 Essex Street, Salem, Mass.



| <i>from</i> |    |       |          |            |      | <i>towards</i> |             |        |             |           |              |
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| <i>from</i> |    |       |          |            |      | <i>towards</i> |             |        |             |           |              |
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| H.          | K. | H. K. | Courses. | Winds.     | Lee. | Remarks.       |             |        |             |           |              |
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| from    |    |       |          |            |      | towards      |             |        |             |           |              |
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| 6  |    |       |          |            |      |               |              |        |             |          |               |  |
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| 8  |    |       |          |            |      |               |              |        |             |          |               |  |
| 9  |    |       |          |            |      |               |              |        |             |          |               |  |
| 10 |    |       |          |            |      |               |              |        |             |          |               |  |
| 11 |    |       |          |            |      |               |              |        |             |          |               |  |
| 12 |    |       |          |            |      |               |              |        |             |          |               |  |
| 1  |    |       |          |            |      |               |              |        |             |          |               |  |
| 2  |    |       |          |            |      |               |              |        |             |          |               |  |
| 3  |    |       |          |            |      |               |              |        |             |          |               |  |
| 4  |    |       |          |            |      |               |              |        |             |          |               |  |
| 5  |    |       |          |            |      |               |              |        |             |          |               |  |
| 6  |    |       |          |            |      |               |              |        |             |          |               |  |
| 7  |    |       |          |            |      |               |              |        |             |          |               |  |
| 8  |    |       |          |            |      |               |              |        |             |          |               |  |
| 9  |    |       |          |            |      |               |              |        |             |          |               |  |
| 10 |    |       |          |            |      |               |              |        |             |          |               |  |
| 11 |    |       |          |            |      |               |              |        |             |          |               |  |
| 12 |    |       |          |            |      |               |              |        |             |          |               |  |
|    |    |       | Dist.    | Diff. Lat. | Dep. | Lat. by D. R. | Lat. by Obs. | Varia. | Diff. Long. | Long. by | Long. by Obs. |  |
|    |    |       |          |            |      |               |              |        |             |          |               |  |



The following is a list of the Officers & Crew of  
the Ship Thomas Perkins of Salem, from New York  
to Manila & other Ports in the East Indies—

William Graves Jr Master—

|                    |                      |             |             |
|--------------------|----------------------|-------------|-------------|
| Samuel W. Pike     | 1 <sup>st</sup> Mate | Salisbury   | Mass        |
| Charles Endicott   | 2 <sup>d</sup> " "   | Salem       | "           |
| George Wetzel      | Carpenter            | New York    | New York    |
| Malan Dalrymple    | Sailmaker            | "           | "           |
| Theodore Skillings | Steward              | Portland    | Maine       |
| George Elsworth    | Cook                 | Halifax     | Nova Scotia |
| Charles Townier    | Seaman               | London      | England     |
| Edward Miller      | "                    | Liverpool   | "           |
| John Jackson       | "                    | New London  | Connecticut |
| John Casin         | "                    | Trieste     | Italy       |
| Alexander Crozier  | "                    | Paris       | France      |
| Daniel Sadler      | "                    | Limerick    | Ireland     |
| Cyrus A. Sadler    | "                    | "           | "           |
| Richard Jackson    | "                    | "           | "           |
| Richard Dietmer    | "                    | Lubeck      | Germany     |
| Jacob H. D. Barker | "                    | Alton       | Denmark     |
| Hans C. Vogt       | "                    | Apenrade    | "           |
| John Helgreen      | "                    | Flushing    | Holland     |
| Isaac Harding Jr   | Ord Seaman           | Haverhill   | Mass        |
| Thomas Knapp       | "                    | Newburyport | "           |
| Alfred G. Coffin   | "                    | "           | "           |
| Charles A. Johnson | Boy                  | Salem       | Mass        |
| Samuel Endicott    | "                    | "           | "           |
| Wm. D. Waters      | "                    | "           | "           |

Died at Manila of Cholera December 16<sup>th</sup> 1845

Malan Dalrymple Sailmaker & John Helgreen Seaman—



